Epistemology in Classical India

The Knowledge Sources of the Nyāya School

Stephen Phillips

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For Colin and Prashant

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Acknowledgments

This book began in the epistemological reconstructions of a previous generation of Nyāya philosopher/scholar, Bimal Matilal, Jiten Mohanty, Karl Potter, and Sibajian Bhattacharyya in particular, along with the "radically empiricist" and "tracking the truth" approaches to epistemology of my teachers Roderick Firth and Robert Nozick. More fundamentally, I owe my understanding of Nyāya to my teacher and colleague, N. S. Ramanuja Tatacharya, a traditionally trained Sanskrit-speaking scholar/philosopher whose mastery of the *pramāṇa-śāstra* is matched only by his graciousness and generosity. We worked on Nyāya over a period of years (with six different trips by me to India) at the Institut Français de Pondichèry in Pondicherry in South India and later in Bangalore.

Let me also acknowledge Arindam Chakrabarti, with whom I discussed Nyāya epistemology at length in connection with papers the two of us read at a special session of the American Philosophical Association, Eastern Division, New York, December 2000, "Justification, Mental Causation, and Defeaters: An Introduction to Indian Philosophy for Analytic Philosophers." My paper, "What Analytic Philosophers Can Learn from Indian Reliabilism," and Chakrabarti's, "Knowledge from Trusted Tellings and Its Preventers," were critiqued by Philip Quinn, Matthew Steup, and Steven Luper.

More immediate predecessors to the chapters here are four papers I presented in 2009 and one in 2011: to the Philosophy Department of Baylor University, "The Nyāya Theory of Knowledge Sources: Perception, Inference, and Testimony as Factive, Prolific, and Trusted," "The Epistemological Question: Nyāya on the Purpose of *Pramāṇa-śāstra*," at the conference "Self, Knowledge, and Reality in Indian Traditions," University of California, Berkeley, "Nyāya's *pramāṇa* (Knowledge-Generators) as Natural Kinds," at the conference, "Thinking Inside the Box: The Idea of a Category in Indian Philosophy," Center for Hindu Studies, Oxford University, "Cannibalizing Nyāya Epistemology," at the "International Conference for Indian Philosophy: World Views," Barcelona (read in my unfortunate absence by Parimal Patil), and, most recently, "Nyāya's Internalist Theory of Justification Applied to Its *mukti-vāda*," at the University of New Mexico, at "Life, Death, and Liberation: A Conference of Comparative

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A portion of chapter four is taken from my contribution to Piotr Balcerowitz, ed., *Logic and Belief in Indian Philosophy*, Warsaw Indological Studies, Volume 3 (Delhi: Motilal Banarsidass, 2011), "From Gaṅgeśa's *Tattva-cintā-maṇi*, the *kevala-vyatireki-prakaraṇam*, 'Negative-Only Inference.'" I wish to thank Piotr for his editing. The entry in the on-line *Stanford Encyclopedia of Philosophy*, "Epistemology in Classical Indian Philosophy" <http://plato.stanford.edu/entries/epistemology-india> although appearing on the Web earlier than this book's date of publication is in many places derivative.

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1 Historical and Conceptual Introduction

This book is written for philosophers and students of philosophy, not for specialists in classical Indian thought. An historical stage is set in this first chapter for a philosophic spectacle to follow. And even here the main aim is not historical but to introduce key concepts of the theory of knowledge that will be engaged throughout, that of the Nyāya school. Nyāya's epistemological concepts were pretty much shared across school or system, but my intention in this book is not to present a common classical Indian epistemology but rather only the Nyāya version. Competing Buddhist and other theories will be surveyed, but mainly from the Nyāya perspective. I try to avoid using Sanskrit words, but those I do use are defined in an appended glossary, the first part of which gives dates of texts and authors as well as the names of the major schools together with their most important positions.

In this book I attempt to draw on as much of Nyāya history as I command to creatively reconstruct Nyāya epistemology in the philosophic terms of English. While an individual author may or may not have had his own distinct views and arguments, every Nyāya philosopher takes himself to speak for the school. Although there are "camps" in contemporary philosophy, there is little that is similar to the classical Indian school. The established view of a school is called *siddhānta*, as is too the portion of a text where an author presents his own views and arguments as opposed to *pūrva-pakṣa*, text devoted to prima facie views or opponents' reasonings. My point is that textual *siddhānta* is always to be taken as expressing more than the views of an individual thinker, as expressing what the author takes to be the truth as discerned in Nyāya in general. Although some of the later philosophers have important differences with earlier Nyāya positions, differences they point out, usually these are not very radical and more a matter of refinement than revolution. Originality is downplayed, as authors strive to perfect the system and answer objections from other schools. Thus to try to find a single coherent theory, which is admittedly an abstraction from a long series of texts, is in accord with the dominant attitude within Nyāya itself. To be sure, the school's later history is marked by innovative arguments and a few novel positions, mainly in ontology. And to some extent, every major author, including those belonging to what comes to be called Old Nyāya and of early New Nyāya

(Gaṅgeśa and company, fourteenth century), is creative in representing the philosophy and responding to challenges from Buddhists and others, sometimes fellow realists of distinct schools. But the Nyāya mainstream changes hardly at all. Moreover, innovations and divergences should be understood against that background, it seems to me. This mainstream the tradition takes to be defined by the *Nyāya-sūtra* and its core commentaries (c. 200–1000) and then in the New Nyāya period by those works plus Gaṅgeśa's *Tattva-cintā-maṇi* (c. 1325).

The outline of the Nyāya theory of knowledge should be plain by the end of this chapter, but let me say right away that all knowledge is produced by delineable knowledge sources according to Nyāya, and it is through theorizing about how we know that the sources are in place that Nyāya philosophers provide a theory of justification. It is my contention that, details aside, Nyāya's project can be generalized as an epistemological theory according to which, first, there are two types of knowledge, unreflective and certified, and, second, there are signs of knowledge sources (and their imitators such as fallacious reasoning) recognizing which we turn our unreflective knowledge into knowledge certified. By knowing the sources of our beliefs, we come to have epistemic justification.

NYĀYA WITHIN CLASSICAL INDIAN PHILOSOPHY

Sanskrit philosophical literature as defined by a prominence of self-conscious argument (a criterion ruling out very old proto-philosophical texts such as the Upanishads) runs from about 200 BCE to 1900+. Some philosophy is still written today in Sanskrit by the traditionally learned. Nyāya is one of a dozen or so prominent classical schools using Sanskrit as its medium. Sanskrit was an intellectual *lingua franca* across India for more than two thousand years, with extensive literatures in grammar, medicine, poetry, drama, aesthetics, astrology, jurisprudence, and other fields in addition to more well-known traditions of religion and philosophy (Buddhist as well as Hindu and Jaina). In 1835, the British Parliament declared that no government funds would go to schools using Sanskrit, and Sanskrit traditions and literatures other than those such as Vedānta sustained by popular religion have given way to modern cultures and the media of the regional languages and English.

In Sanskrit, the word '*nyāya*' is a proper name, the name of the school, but the word can also mean "logical or investigative procedure." Sometimes translators say the school of "Logic." In the system itself, the word is given a technical meaning as the method or methods, both evidential and conceptual, to be employed to end controversy and alleviate doubt, in a word, philosophic procedure.[1] Nyāya proves its appellation apt by probing the concept of knowledge, repelling skepticism, and championing right procedures in both debate and inquiry. Its methods were picked up by other schools, and were used in other areas and literatures such as jurisprudence and aesthetics. And there was a long mutual exchange and development between Nyāya and Buddhist Yogācāra in particular on topics of logic and informal reasoning.

Nyāya emerges as a school of philosophy, a worldview to be sustained by generations of contributors, together with six or seven competing philosophies, around the second century CE (some of the classical schools are not so old). It has a root text, the *Nyāya-sūtra*, which is attributed to Gautama, a legendary but entirely human figure about whom we know nothing much in particular. Scholars have claimed to find a manual of debate and informal logic as a subset of the whole.[2] Since the *Nyāya-sūtra* includes much more than logic, probably the text should be regarded as having been gradually filled out in its earliest years, with the logical portions the oldest. But for our purposes there is no point in dividing it and assuming other authors than Gautama, the "*sūtra-kāra*."

Alongside Nyāya's celebrated epistemology is a complex ontology (concerning what is real and interrelations among realities), ethics, philosophy of language (to be surveyed by us under the epistemological category of testimony), and an extensive arsenal of arguments, both constructive and destructive, aimed at opponent positions, on metaphysical topics such as personal identity, the reality of universals, the relationship of properties and property-bearers, and so on, almost all of which were debated across school. Historically, Nyāya comes to be, for example, the target of Buddhist polemics (very highly refined Buddhist polemics, I might add, in Dharmakīrti, Śāntarakṣita, Ratnakīrti, and other Buddhist Sanskrit authors). However, Mīmāṃsā, "Exegesis," a school bent on defending Vedic revelation with its own subtle positions in the epistemology of testimony, assumes the role of the main adversary, and not the Buddhist, in most later Nyāya treatises.

Absolutely central to the Buddhist debate is Nyāya's commitment to realism, that is, to the metaphysical thesis that things are what they are independently of our knowings and perceivings, which are themselves conceived in objectivist terms. Nyāya embraces an empiricism that connects with its realism: without perception, which is our principal link with the world, none of the other sources could operate. In all periods—and no matter who the opponent targeted—Nyāya philosophers try to make plain the connections between the operations of knowledge sources and the things and facts known. Sometimes its principles of epistemology are defensible independently of ontology, it seems to me, but sometimes not. Similarly, some of the ontological theses are suitably abstract and plausible, while others are inadequate. For example, similarity is analyzed as a property supervenient on other properties and defined as one thing having many properties in common with something else—a view that has merit independently of Nyāya's theory of four types of atom, for instance, or sound as a quality. In any case, the worldview is progressively refined and expanded by *Nyāya-sūtra* commentators and by philosophers writing non-commentarial works over almost a score of centuries. A series of commentaries

written from about 400 to around 1000, with four contributors (in addition to Gautama, the "sūtra-maker," they are Vātsyāyana, Uddyotakara, Vācaspati Miśra, and Udayana) form a few thousand-pages of classical *Nyāya-sūtra* (*NyS*) literature. During the period—called Old Nyāya—there are also a few non-commentarial texts by Jayanta Bhaṭṭa and Bhāsarvajña among others. These rarely diverge from views of the *NyS* commentaries, but some of the outlier positions and arguments are interesting in their own right and will be taken up by us in later chapters.

So-called New Nyāya, Navya Nyāya, emerges in the thirteenth and fourteenth centuries and flourishes in the later part of the classical or pre-modern age, well into the period of Muslim rule in North India. New techniques of analysis become standardized and more sophisticated positions ironed out. The New Naiyāyikas profited not only from study of Old Nyāya but also, in particular, of the competing positions of Buddhist Yogācāra and Mīmāṃsā. In later years, Navya-Nyāya texts become numerous, and the philosophic sophistication of its advocates—who are learned, we should stress, not only in Nyāya tradition but in controversies across school—is extraordinary by any measure. Along with new techniques of logical and linguistic analysis, there are new arguments and argument strategies. But there is little change in basic outlook or core positions, that is, at least not until Raghunātha (sixteenth century) of late Navya Nyāya, who does considerably modify, not to say overhaul, the inherited ontological system.

Still, Nyāya does not start with but comes to develop in the late commentarial literature and in a long and complex text by Udayana in the eleventh century a rational theology rich with arguments (an omniscient Creator is established by a dozen formal proofs several of which are unknown in the West), as will be explained in the chapter on inference. Nevertheless, despite Udayana's arguments, Nyāya's strong vein of ontological reflection is developed independently of its all-told rather minimal theology. This is because the ontology is thought out, in the earlier centuries, mainly within the Vaiśeṣika school, which is atheistic, and Vaiśeṣika arguments and commitments are carried over into the later periods without much if any theological influence. A layered view is put forth of individual things as particular substances that bear different types of property and relation to other things, including causal relations. At least this much of a core remains even with innovators such as Raghunātha of the later Navya period and apparent mavericks such as Bhāsarvajña (tenth century). Nyāya and Vaiśeṣika are sister schools in the early period, but from about 1000 and Udayana they become a single system.[3]

KNOWLEDGE: TRUTH, BELIEF, AND JUSTIFICATION

Several words in Sanskrit are used much in the same way as 'know' and company in English.[4] There are, however, some differences. For example,

the word '*jñāna*', which has about the same semantic range as 'knowledge' in English (philologically the two are Indo-European cognates), is better translated "cognition" since there can be false *jñāna* whereas there cannot be "false knowledge" as the words are used in (analytic) English. Most importantly, a cognition is a mental event, not a belief. Better to understand how knowledge is viewed as an occurrent mental event, as a "cognition," *jñāna*, in Nyāya as throughout classical Indian philosophy, let us take an overview.

We may say then provisionally and painting in broad strokes that there are two levels to the Nyāya theory, *pramā*, raw animal knowledge, so to say, and knowledge self-consciously certified, *nirṇaya* and *siddhānta*.[5] "Animal" is not quite the right word since Nyāya views inference and testimony, and not only perception, as generating knowledge without the reflection required for epistemic justification. Furthermore, reflective knowledge is not fundamentally different from the unreflective variety adults share with children and animals who cannot formulate an argument. The one derives from the other, and self-consciously attending to knowledge sources is one way we achieve reflective knowledge, according to Nyāya.

Like other schools of classical epistemology, Nyāya views all knowledge as *pramāṇa*-born, i.e., generated by a veritable "knowledge source" (perception, inference, analogy, or testimony).[6] In more technical terms, we may say that for Nyāya occurrent knowledge (knowing and thinking right now "I am writing for a worthy reader") forms non-occurrent knowledge retrievable by memory ("I was writing for a worthy reader"). Occurrent cognitions, *jñāna*, form beliefs, and beliefs that are true are born of cognitions, *pramā*, that are themselves born of knowledge sources, *pramāṇa*, the citing of which constitutes justification ("I saw it," "There is this inference," "S told me").

Nyāya epistemology is first of all an externalism, since it is a causal theory of knowledge according to which self-conscious justification by a subject S of a proposition *p* is not required for S to know that *p*. Instead, S needs to stand in the right causal relation to the truth that *p*. Furthermore, S may well know that *p* without knowing that she knows that *p*—this the so-called KK thesis, which is a defining mark of analytic internalism, is rejected by Nyāya. Instead of a matter of right relation between a knower and a fact out there in the world, the fact captured by the proposition or belief generated, internalism insists that a knower fulfill epistemic duties, that there is more to knowledge than passively receiving information, that a person does not know what she has not consciously considered and tried to justify. There is clearly internalism in Nyāya's theory of knowledge, since the school has a robust theory of justification along just such lines, that is to say, reflective certification. And a thorough-going externalism struggles, unlike Nyāya, to explain justification.

Let us go over a few technical items. A cognition's knowledge status entails its truth or veridicality (*yathārthatva*, *pramātva*). The seventeen-century

textbook-writer Laugākṣi Bhāskara echoes Gaṅgeśa, the New Nyāya systematizer (fourteenth century), providing a definition that is pretty much standard throughout later Nyāya:

> Veridicality is the having of φ predication content about an object that is φ, e.g., the bit of knowledge, "That's a pot," in reference to a pot. And this definition is common to both memory and immediate experience, so we should conclude. And here the truth of the knowledge makes it fit for producing successful action.[7]

If a cognition, for example, that *a* is F is veridical, then *a* is F, and if a cognition presents an object not as it is, it is not veridical. A veridical cognition, no matter what its source, hits a fact, or, more properly, an object (*viṣaya*), its object, and there can be cognitions that are accidentally veridical. For instance, a fire-cognition produced from a person's mistaking dust for smoke on a mountain where there is actually fire is veridical but is not *pramāṇa*-generated. Not being the product of a knowledge source, it does not get the highest epistemic award, which is *prāmāṇya*, "truth generated by a knowledge source," which is something more than mere truth or veridicality, *pramātva*. A merely veridical cognition is a cognition of an object as it is (*yathārtha*), and may or may not be *prāmāṇya*, which entails that there is a true cognition that is *pramāṇa*-born.[8] The non-genuine inferential cognition of fire from seeing dust is veridical though accidentally. The veridicality of cognitions is explained by the cognition-producing process, but veridicality itself is a relation that is independent of cognitive origin.

Nyāya philosophers embrace a correspondence theory of truth or veridicality, although about the equivalent term in Sanskrit, *yathārthatva* ("as the object, so the cognition"), there is some unhappiness. This is due to a sense that the term is thought to imply a kind of similarity, and there is, Nyāya philosophers say, little similarity between, for example, a pot and a cognition of a pot.[9] Nevertheless, facts make cognitions true, we are told again and again by Vātsyāyana and company.[10]

Now knowledge for Nyāya is, as mentioned, a species of mental event, not of belief, although a certain range of mental states—thoughts, testimonial comprehensions, inferences, perceptions—have belief—i.e., propositional—content. Perhaps the closest concept in Indian traditions to the "belief" of Western philosophers is "trust in cognition," for which there are common words.[11] It is axiomatic that we trust knowledge (*pramā*) to guide us in what we do. Epistemic trust is an important part of the Nyāya picture. Nyāya focuses, however, on occurrent cognitions or awarenesses. These are psychological events or properties that have verbal (in the case of testimony) or verbalizable indications or content. To bridge traditions of epistemology, we have to move back and forth between beliefs and cognitions that are identified by content types and by mode of generation (that a cognition is perceptual or inferential, etc., in putative type is said to be introspectable). Nyāya's veridical cognitions are psychological events that inform us about things, and so may be thought of as occurrent beliefs in that a cognition's content or indication is to be expressed in propositional form. What we might call standing beliefs are for Nyāya preserved in memory, which works through the firing of *saṃskāra*, "mental dispositions." Central to the Nyāya epistemology is to view the truth of standing beliefs to depend upon the truth of the occurrent cognitions that form them. Thus Nyāya can be said to presuppose the two highly defensible theses; first, that all of our standing knowledge has resulted from genuine knowledge sources, and, second, that all of our justified beliefs have resulted from knowledge sources (objectively justified belief) or their close pretenders (subjectively justified belief), the bogus *pramāṇa* that we sometimes mistake for the real McCoy, more about which in a moment.

With regard to cognitive "content" (*viṣayatā*), Nyāya holds that even the simplest verbalizable cognition is of an entity as qualified by a qualifier. That is to say, even a perception's indication is said to have minimally the structure of a qualificandum qualified by a property or qualifier, cognized all at once.[12] For example, the cognition, "That's a pot," indicates an entity as qualified by pothood or being-a-pot. Nyāya embraces the notion of implicit occurrent beliefs. Efforts, for example, which are another kind of psychological property, are thought to have cognitive content or, more precisely, an object-directedness towards something that might be picked up, a pot, for instance.

There seems to me to be the advantage of parsimony in talk of cognitions rather than beliefs. For cognitions are immediately introspectable properties of a person and something such seems uneliminable, whereas beliefs seem otiose once we have cognitions and the dispositional properties they etch in memory. Nyāya philosophers account for the non-occurrent quality of standing beliefs by a theory of memory, as indicated. Indeed, all thinkers on the classical scene, talk about memory in terms of "mental dispositions," *saṃskāra*.[13] There is an elaborate view both of dispositional formation in memory and dispositional determination of occurrent cognition and action, as we shall see in the first section of the chapter on perception. In brief, perception or another cognition-generator indicating *a* as an F produces a disposition that when aroused (by environmental stimulus or internal "awakener," *bodhaka*) is itself a causal factor helping to bring about a remembering, an effort, or another psychological event or property also indicating *a* as an F.

Nyāya thinks of memory in terms of dispositional properties. But it is not a reductionism, and is unlike Western dispositional theories of belief that would reduce beliefs to dispositions to act. The targets of epistemic evaluation are cognitions, which are psychological events inscribing dispositional properties in memory. All true and reliable memories are formed by cognitions that are bits of occurrent knowledge generated by knowledge sources. Memory is then not an independent source. Remembering operates

depending on the effects of the real knowledge-generators, the processes responsible for the origination of our true beliefs. So instead of evaluating memories—which of course we could do if need be—as epistemologists we focus on occurrent knowledge, the source of all true and reliable memory.

What is the object or range of objects of a bit of knowledge according to Nyāya? And what underpins the intersubjectivity of cognition and belief, such that two people S and T can have the same belief? A common Western view is of course that propositions are the objects of belief, their content, though it is mysterious how S and T can both access propositions as objects. So again I think we find the merit of parsimony in Nyāya's ontological picture. S and T each have their own cognitions, but cognitions fall into types according to their propositional content, which S and T may well indeed both be apprised of. The intentionality or having-an-object (*viṣayatā*) of cognitions is a direct relation between cognitions and things in the world, with no intermediate realm of sense data, ideal forms, or propositions. A veridical cognition indicates something's being some way that it is. That is its object. Strictly speaking, cognitions do not have content. They have intentionality which by nature is the hitting of things. The relation between a cognition and its object is talked about in two ways, as objecthood, which is a relational property of an object cognized with the cognizing cognition as the "successor" or second term, and having-an-object, which is a relational property of a cognition with the object cognized as the successor term.[14]

What about cognitions that are non-veridical, whose indications do not hit the facts? According to Nyāya, a non-veridical cognition also has an intentionality that is directed towards a reality or realities. When we misperceive a rope as a snake, taking *a* to be F when it is not F, an F-hood bit of intentionality, which originates in previous experience of Fs—of snakes in our example—directs one towards that property, which is thoroughly real, among the world's furniture, though it is not experienced where it exists in fact, which is in snakes, not in the rope at hand. At work would be a mental disposition (*saṃskāra*) which under normal conditions would prompt a remembering but which in the deviant conditions of perceptual error fuses a snakehood bit of intentionality into a current pseudo-perception. A non-veridical cognition is said to have misplaced intentionality. It presents something (the rope) not as what it is (*anyathā-khyāti*).[15] But what it presents it as is something that exists full-bloodedly elsewhere, and as its object under normal circumstances is intended also in the abnormal circumstances of perceptual error. It is the real-world locus of part of the objecthood whose second term is the cognition whose object it is.

The crucial cognitive relation considered from the side of cognition, a cognition's having-an-object, is said to have three "parts": a cognition's qualificandum portion, its qualifier portion, and the portion of qualificative relationality, matching the object's objecthood, i.e., its being a property-bearer and mere object cognized (*a*), its having a property that is being cognized (F), and its being related to that property by an ontologically

qualificative relation. An illusion's qualificandum portion, the "*a*" part in "*a* is F," successfully hits the object in front, the rope, as were someone to say "That's a snake," pointing to a rope, being right that there is something there, ontologically a qualificandum cognized as qualified by a qualifier, though the qualifier is "misplaced." (This hitting of the *a* would indicate the error to be pseudo-*perceptual*, i.e., a result of a process that in some way is a deviation from the operation of perception as a veritable "knowledge source," *pramāṇa*.) Nyāya's theory of perceptual illusion will be spelt out further in Chapter 3.

Typing cognitions by their intentionality allows Nyāya philosophers to carry out their textbook logic and epistemology (often using pronouns for variables as well as the technical terms of inference, "prover," *hetu*, and so on), but "having-an-object," *viṣayatā*, is itself just a property of cognitions, a relational property whose second term is, I repeat, the object cognized. Again, there appears to be parsimony, no cluttering up of Nyāya ontology—indeed simplicity is a touchstone often cited by classical philosophers, both Naiyāyikas and their adversaries (this is a variety of *tarka*, "suppositional reasoning": see the section in Chapter 2). In sum, a person's life as an epistemic agent is comprised of a series of cognition tokens the types of which as specified by their having-an-object Nyāya philosophers discuss in the ways Western analytic epistemologists discuss propositions and people having the same belief.

Cognitions are, then, moments of consciousness, not species of belief, but we may say that cognitions form beliefs in forming dispositions and that veridical cognitions form true beliefs. A *knowledge* episode—to speak in the Nyāya way—is a cognition generated in the right fashion, with the right origins in fact. Knowledge episodes form non-occurrent knowledge, and so an examination of what is crucial to the arising of a knowledge episode is crucial to the evaluations of epistemology, as Nyāya sees things.

Now knowledge cannot arise by accident. A lucky guess, though true or veridical, would not count as knowledge because it would not have been generated in the right fashion, would not have the right pedigree or etiology. The central notion in the Nyāya view—as of all classical Indian epistemology—is the "knowledge source" (*pramāṇa*), a commonly recognized process of veridical-cognition generation. Nyāya's is an epistemology of knowledge sources, the most important of which are perception, inference, and testimony (the fourth source, analogy, is directed solely to word-meanings).

Briefly let me mention what looks to be to Western eyes a strange assumption Nyāya makes (along with the everyday speaker of Sanskrit, it seems to me, though not as self-consciously). The word '*pramāṇa*' ("knowledge source") along with the words for the individual knowledge sources, '*pratyakṣa*' ("perception"), and so on, are used such that the truth of the resultant cognition is implied. This runs counter to the meaning of the corresponding English words, along with broad philosophic supposition, which is different with 'perception' and company. I think the factivity of

perception and so on is a common presupposition in classical Indian epistemology, running across school, though it is perhaps motivated differently in different traditions. Yogācāra Buddhists, for example, apparently out of allegiance to the metaphysical view known as momentariness, which is a presentism (only things existing right now are real), claim that there is no difference between source and result, process of knowledge and effect, *pramāṇa* and *pramā*. Thus there can be no wedge driven between cause and effect such that there could possibly be knowledge by accident. The Vedic schools (Mīmāṃsā, Vedānta, Nyāya, Vaiśeṣika, Sāṃkhya, Yoga) do distinguish knowledge as result and knowledge-producing process but also see the concepts as wedded in that, as indicated, no genuine knowledge source ever produces a false belief. Only pseudo-sources do. That is to say, no non-veridical cognition is knowledge-source generated.

A knowledge source may be defined as the lawful connection between the fact that *p* and the belief that *p*. Deviant functioning of a process or method, however truth-conducive, is not a truth-guaranteeing *pramāṇa*. Being merely reliable does not fit the bill. A veritable "knowledge source" according to Nyāya has a truth logic, like 'knowledge' in English. Maybe we should say perception*, inference*, testimony* to render the Nyāya ideas. False testimony, for example, does not count as a knowledge-generator; the Sanskrit word for testimony is used only for what would be termed in English "epistemically successful testimony," i.e., with a hearer having knowledge in virtue of a speaker telling the truth. A non-veridical perception is not really a perception at all but a "pseudo-perception," *pratyakṣa-ābhāsa*, "apparent perception," a perception imitator or perception solely from a first-person point of view. You don't really *see* an illusory snake; you only think you see one. An apparent perception P^2 may be indistinguishable from the subject's own perspective from a bit of genuine perceptual knowledge P^1, both forming *a*-as-F type dispositions. But Nyāya insists they are different, taking a "disjunctivist" position. The two do not in fact have the same intentionality, and the one results from a veritable knowledge source (no mere method) and the other does not. According to Nyāya, nothing that a person knows would have been formed by a cognitive process other than a knowledge source, *pramāṇa*. Part of the Nyāya project is to specify the connections between the world and cognizers that result nomologically in cognitions that are true.

The three sources of knowledge of the world as opposed to meanings, namely, perception, inference, and testimony, are thought of, each one, as factive, prolific, and trusted; factive, as generating cognition that is true, prolific in operating throughout our daily lives, and trusted at the first level by people ordinarily without thought or express justification. At the second level, the three are trustworthy because they deliver the truth. Habits of speech are reinforced by success in action, classical theorists across school recognize in accepting the presumptive authority of common opinion (*vyavahāra*). But "a knowledge source" probably should be thought of as a technical term, one that entails factivity, as we have seen, as a matter of definition. Similarly with justification, the having of which, if veritable (or objective), as opposed to the apparent (*ābhāsa*), means that the justified cognition is true.[16] Nevertheless, according to Nyāya justification can be conscious or alternatively implicit, certified belief being distinct from beliefs belonging to first-order knowledge-generators, perception and the rest. Certification, which will be our primary focus in Chapter 2, is apperceptive knowledge that a target cognition as specified by its objecthood is true.

A knowledge source can be identified both by intrinsic features and in relation to a particular result which becomes then certified—the foundational way a cognition can be known to be true.[17] In brief, Nyāya presents causal paradigms whereby beliefs can be evaluated supplementing a coherentist picture. For non-foundational beliefs, certification consists of argument: a conclusion may be shown, formally, by inference, to follow from a set of known premises. A special kind of *modus tollens* inference has been interpreted as foundational: a cognition can be certified with respect to its fruit, success of effort and action ("I would not have been successful had the cognition been false").[18] However, this is an instance of *tarka*, "suppositional reasoning," and presupposes the certificational status of having for one's belief, and recognizing, a genuine knowledge source. Source identification is where the true foundations lie. And once a type of cognition as specified by its objecthood has been certified, a later cognition known to be a token of that type would be certified, too.[19] Certificational knowledge can in some cases result from *tarka*, but, to repeat, to be effective *tarka* presupposes the operation of a genuine knowledge source which has to be identified ("My cognition of a river in the distance proved to be a genuine perception and not an illusion, since I would not now be bathing, etc., had it been non-veridical"). In other cases, identification of a source apperceptively serves as certification without *tarka*. Sometimes source identification is not immediately apperceptive, however, but rather a matter of inference, as we identify signs, concomitant marks, of knowledge processes such as proper organ/object connection in the case of a putative perception or the trustworthiness of the testifier in the case of putative testimonial knowledge.[20] That is, we certify that a cognition in focus is knowledge-source-produced by an inference that takes as its prover term (*hetu*) an indicator (*guṇa*, an "excellence," or *doṣa*, a "flaw") that differentiates the properly pedigreed from the close pretender.

Aside from foundational considerations, in general we come to know that a given cognition is true by inferring that it is true by following from other propositions established in our knowledge system (*siddhānta*), as mentioned. Inferential certification gets a bit complicated, however, because inference proper has to be distinguished from "suppositional reasoning," *tarka*, used to tip the scales of justification one way or another when there are competing claims complete with competing etiologies, two apparently good inferences with contradictory conclusions, for instance. We shall take

up *tarka* in Chapter 2. Philosophy, by the way, which is all reflective knowledge (since all philosophic proposals get challenged), proceeds generally by inference and *tarka*. New Nyāya texts are little other than a series of inferences and bits of suppositional reasoning. But certification also goes on, Naiyāyikas recognize, in everyday life.

In sum, certified knowledge, *nirṇaya*, contrasts with mere knowledge, *pramā*, by involving a kind of "conscious justification" as opposed to a cognition's being simply justified. A knowledge source provides a non-inferential bottom level of implicit justification that does not itself have to be known, or, in the case of inference as a knowledge source, a bottom level of justification that is inferential but is also about the world, i.e., about something other than the veridicality of the cognition generated by inference. On the meta-level of certification, it is that veridicality that is arrived at.

A person S knows a proposition that *p* just in case the belief that *p* has been generated in the right way by the truth that *p*, and this includes knowledge of the knowledge that *p*. Nyāya would assimilate knowledge of knowledge to its overall causal picture, and to know a cognition, including its objecthood (what it is about, its content, whether or not true), certification is not required.[21] But to certify a cognition that *p* is of course something more than mere knowledge that a cognition in focus indicates that *p*. Certification invariably strengthens trust (*viśvāsa*), fortifying beliefs against doubt. With respect to a question, our being able to cite the sources of our beliefs is sometimes crucial. Given practical motivation to eliminate doubt and find out the real truth, we self-consciously try to make sure that processes of factual connection are really in place. Nevertheless, knowledge does not require certification. Knowledge does not require "conscious justification" in the sense explained. It requires only the proper tie between cognition and fact, which amounts to a cognition's being knowledge-source-generated. If justification is required for knowledge, then justification is simply the fact that a cognition is source-generated whether anyone knows that fact, according to Nyāya.

All this is perhaps clearest in the Nyāya view of testimony. The central position is that uptake is fused with a modicum of positive epistemic warrant such that a hearer is justified normally in believing a statement without a background check of the trustworthiness of the testifier. There are circumstances where we may legitimately ask: "Does my informant know the truth? Could she be deceiving me?" The speaker's knowing the truth and having no reason to deceive are identified as certification conditions ("epistemic excellences," *guṇa*) for testimony, and it is a commonplace to certify testimonial knowledge with reference to these. But here, too, we can have knowledge without certification. Doubt-free understanding—entailing warranted acceptance—is the cognitive default, how a hearer normally learns.[22]

Consider now how Nyāya looks in the light of post-Gettier definitions of knowledge (Edmund Gettier having shown that the three conditions of belief, truth, and justification are together insufficient, that there are cases of justified true belief that are not knowledge).[23] Thus we come to a fourth condition proposed by John Pollock and others in response to Gettier cases, justification-plus or *objective justification*.[24] Such examples were known on the classical scene but were not given extensive analysis.[25] Consider again the scenario of a line of dust blown up from a mountain across the way, a mountain where there is indeed fire though unrelated to the dust that a subject S from a distance mistakes for smoke.[26] From this apparent perception of smoke, by apparent inference, S has a cognition that prompts effort on his part towards fire, real fire at precisely the point that S hits upon by tracing the mistaken perceptual evidence.

My reading of Nyāya here is that the cognition is to be regarded as veridical but not as knowledge certified (*nirṇaya*). The cognition could be objectively defeated although S has at the time no reason to suspect that the cognition has not been source-generated.[27] To the deluded subject, the cognition would seem to deserve certification. But just about any fact can become concealed. The belief that there is fire on the mountain, although true, *pramā*, cannot be objectively certified (*nirṇaya* = *prāmāṇya*). The subject may have subjective ("pseudo-" or bogus) justification, but there is no objective knowledge (*arthavat*—see the quotation from Vātsyāyana at the beginning of the next chapter). The proper functioning that constitutes inference—as opposed to *apparent inference*, which is what is going on with S—requires true perceptual premises, and in the dust/fire apparent inference a premise is false. Considering the first-person perspective, the subject has an excuse, there is *prima facie* warrant. But there is not the correct tie between cognition and fact required for knowledge.

No cognitive process involving acceptance of a false premise would be a genuine knowledge source, since a knowledge source is a type of cognitive process—not a one-time happening—a type of process that invariably generates true beliefs. Nyāya's *pramāṇa* typology is discussed further in Chapter 2, especially in the section, "The generality problem," and further Gettier-style problems not involving false premises are taken up in Chapter 7.

INTERNALISM AND EXTERNALISM

Going over the internalist/externalist debate in analytic epistemology should help us better grasp the distinction between certified and uncertified knowledge in the Nyāya system. Internalists insist, in the tradition of Descartes, that in order to know a proposition that *p* we must have and be aware of a good reason for believing that *p*. From Plato is inherited the account of knowledge as justified true belief, and justification amounts to having a good reason that the believer can articulate. Externalists deny that in order to know we have to have conscious access to our reasons for the belief, arguing that knowledge is a matter of an objective or natural relation between knower and known, in the case of perceptual knowledge a causal

relation. Animals and children have knowledge of various things while they cannot give reasons. Nyāya for its part lines up on the externalist side of the controversy in admitting so-called animal knowledge (including from inference and testimony). However, in the notion of epistemic justification, internalism gets with it traction: despite "unreflective knowledge" where the knower is not aware of, and does not have access to, her reasons for believing, still there is the fundamental epistemological question of whether we have good reasons for believing the things we do.

On such a fundamental question, Nyāya looks to be internalist, embracing in its notion of *nyāya*, "critical reasoning," or "empirical and philosophic scrutiny," its own internalist concept of epistemic justification. Reasons or causes of belief to which we have no cognitive access cannot count as constituting epistemic justification. Western internalists seem rightly more interested in the concept of epistemic justification than they are in the concept of knowledge, since in their view it is in the having of good reasons for our beliefs that we have epistemic merit. Such merit does not lie in simply believing the truth. Even if our beliefs are false in that we are being deceived by a powerful demon or are a brain in a vat made to experience and believe the ways we do by evil scientists on Alpha Centura twisting dials, still we may have epistemic merit if we have good reasons.[28]

To go a little deeper, we may say that in the Nyāya externalism knowledge flows at the first level out of causal connections, natural processes that generate true beliefs, perception, inference, and testimony. As we shall see, inference and testimony (analogy, too) are dependent in their workings (but not reducible to) perception, which is said to be the "eldest," *jyeṣṭa*, knowledge source. But when it comes to certification, Nyāya concerns itself either with arguments or with properties that are signs of *pramāṇa* operation and thus criteria for warranted beliefs of a basic sort. This "modest" foundationalism of Nyāya amounts to source-identification providing warrant that is not conditional. Indeed, putative source-identification is usually enough.

Thus concerning certification, Nyāya lines up with the internalist. Remarkably, Nyāya may be said to side in some ways with both major camps of internalism, the old foundationalists and their coherentist adversaries. The common commitment, also by Nyāya endorsed, is that as epistemic agents we have a duty to believe responsibly, checking our beliefs against the standards of logic and science (*śāstra*). Whether our beliefs actually hit the facts is, so it is argued by the internalists, not the main point, but rather our reasons for thinking they do. Therein lies epistemic merit.

Now Nyāya agrees but with the important *addendum* that by attending to the nature of perception, inference, and testimony, which at the first level operate with us unselfconsciously, we at the second level self-consciously certify what we know and believe. The internalism flows out of the externalism. And while certification is unnecessary for many bits of knowledge, it is of course entirely necessary for theses of philosophy, for example, which are all controversial. Where it is not necessary is in rapidly acquired and rapidly lost bits of perceptual knowledge to which one is mainly indifferent.

Controversy is the spur to philosophy, Naiyāyikas tell us, the spur to what is named *nyāya*, "critical inquiry and reasoning," directed to the resolution of doubt and dispute. Perhaps the biggest difference between Nyāya and Cartesian epistemology is that we do not "begin" with foundational knowledge and work out to knowledge of the world. Rather, we end doubt and controversy once it arises by employing—as best we can and self-consciously as opposed to non-self-consciously before the challenge—knowledge sources to ascertain the truth. These are to be supplemented, the tradition insists from the earliest, by *tarka*, "suppositional reasoning," drawing out untoward consequences, etc., of an opponent's view, very much in the spirit of Socratic *elenchus*, as we will discuss. And at the second level, *pramāṇa* are now "*methods* of knowledge" as opposed to simply natural processes, as indeed is *tarka*, the "reasoning" that is the philosopher's tool. Nyāya does not recognize the internalist's epistemological question as fundamental although it does in its own way recognize foundational considerations (ending doubt or dispute). For example, for a subject S to point out that p is a matter of perception is for S to show the epistemic justification S has for p, which is then known self-consciously at the second level.[29]

In sum, the Nyāya concept of epistemic justification, or, as I prefer, certification, centers on arguments whose premises if challenged can be justified in the end by foundational considerations. But these are not the foundations of the Cartesians in self-evident reasons or beliefs that are justified in virtue of their content or even non-doxastically. No, for Nyāya, our beliefs form a coherent system of mutual support, and anything that we know can be a premise in an argument. Then in addition to this coherentism, there is also a modest foundationalism: beliefs identified as the results of perception, inference, or testimony are certified, presumptively, without further argument, unless there emerges a defeater bringing the identification into doubt (e.g., "You are too far away to see clearly").

Were there a (meta-) challenge to the presupposition that inference, for example, generates beliefs that are true, the Nyāya response would be to use *tarka*, "suppositional reasoning" meant to expose the falsity of an opponent's argument or to support one's own. We shall look at the answer more closely in Chapter 2. But simply put it is that we would not act as we do. Nyāya's project is limited to understanding the knowledge that we trust which is cognition that has been produced in the right way. There is a correlation between knowledge and success in action. The reason we turn to epistemology is to be able to resolve doubt or dispute. Doubt or dispute prevents "unhesitating action," *niṣkampa-pravṛtti*. And the same defaults granted everyday instances of perception, inference, and testimony are granted to any investigation we might self-consciously undertake spurred by doubt or controversy. That is to say, if we self-consciously engage in

an inference whose conclusion is *p*, then we are reflectively warranted in believing that *p* without certifying the certificational capacity of inference. And this is shown in our action, which becomes unhesitating, confident—and rightly so, since, as our philosophers remind us, knowledge helps us get what we want and avoid what we want to avoid.

2 Certification

The first word of the first sūtra of the *Nyāya-sūtra* is '*pramāṇa*', "knowledge source." The oldest extant commentary, by Vātsyāyana, explains the emphasis and the importance of the concept in an opening statement:

> Success of action undertaken on the basis of an object-directed cognition arising from a knowledge source (*pramāṇa*) shows such a source to be objective (*artha-vat*, "having a (real) object"). Without a knowledge source, there would not be knowledge of the object (*artha*, the conative as well as cognitive object), and without knowledge of the object, successful action (i.e., successful voluntary action, *pravṛtti*) would not be.[1]

This is a crucial bit of "suppositional reasoning" (*tarka*) used to explain the point of a system of certification targeting the origins of our beliefs.[2] We do not act unhesitatingly if there is doubt. Epistemology, *pramāṇa-śāstra*, is concerned with the knowledge possessing which a person acts confidently. There is a response to skepticism here which will be developed throughout the chapter.

Genuine doubt or challenge bumps us up to the second level of reflective knowledge, that is, if we can state reasons or justification. This is often not easy to do, since justification requires either argument or source identification. By "source identification," I mean a foundational reason that indicates how a belief has been acquired, as visual beliefs have been generated by vision, inferential beliefs by inference, and testimonial beliefs generated by the statement of an expert. Thus doubts are commonly expressed by questioning how a person acquired information asserted, "Did you see it?" "How do you arrive at that conclusion?" "Who told you that?"

THE JUSTIFICATION REGRESS

Classical Western foundationalism, from Descartes through Russell and Ayer, is motivated by the worry that a series of reasons, reasons for reasons, and so on, could be unending. This would land us in a form of skepticism

since justification is thought to take the form of conditional arguments. Belief B_1 is justified on the condition that the further beliefs B_2 through B_n are justified in that the truth of B_2 through B_n would either entail or inductively support B_1. But why should we believe any or all of B_2 through B_n? Where do the justifying beliefs get their justifying charge, so to say, to be able to light up B_1? If they get it from still other beliefs, we seem to be descending stepwise into an infinite darkness where no belief is really justified.

In the classical Indian context, a problem of a regress of reasons is pointed out by the famous Buddhist Nāgārjuna (c. 100 CE). There appears to be an exchange between Nāgārjuna and Gautama on the issue: "What is the *pramāṇa* for a *pramāṇa*? What is the justification for taking a claim's being generated by a knowledge source to be a claim we should believe?" Nāgārjuna asks. He explicitly alleges that infinite regress looms, "no stopping point," *anavasthā*, for the project that proposes to resolve doubt and controversy by citing *pramāṇa*.[3] Probably he has Nyāya in mind although the name is not mentioned.[4] In any case, several passages in the *Nyāya-sūtra*, as interpreted by Vātsyāyana, address arguments of Nāgārjuna's. The crucial passage for Nāgārjuna's challenge is *Nyāya-sūtra* 2.1.16–20. There we have an analogy drawn to the light of a lamp. Sūtra 2.1.19: "No (justification regress is not stopped by a mere absence of an additional *pramāṇa* as making known a *pramāṇa* cited to justify a claim). For *pramāṇa* are certified in the way that the light of a lamp is used in certification."[5] The lamp is actually a good metaphor to make one miss Gautama's point—which is that certifiers may themselves be certified. The *sūtra-kāra*, Vātsyāyana says emphatically, is not endorsing the Mīmāṃsaka and Vedāntic position of self-certification, *svataḥ-prāmāṇya*—those other philosophers talk about a lamp as not requiring another light to be illumined, i.e., as self-illumining. Self-illumination is not a Nyāya position. Rather, Gautama is pointing out that an instrument like the light of a lamp can be both a means and, non-concurrently for an individual subject S, an object of knowledge. A perceptual cognition provides S knowledge of its object, typically a thing in the world such as a pot. But a perceptual cognition may also be an object, as when we say, "I see it," or perhaps better expressed, "I see my seeing it." And by such apperceptions verbalized as observation statements, or as conclusions of inferences self-consciously drawn, or as purposeful citings of authorities, controversy normally comes to an end. In other words, unless a candidate defeater is cognized with respect to conditions governing the operation of the cited source (*bādhaka-abhāvāt*), presumption of truth is restored for a cognition having been brought into doubt. The burden of proof, the requirement of having good reasons for further doubt, is on the doubter's shoulders. Thus there is no regress in a need to cite one after another *pramāṇa*.[6]

A passage near the end of Vātsyāyana's commentary on *Nyāya-sūtra* 2.1.20 expressly blunts the regress charge:

> If comprehension of perception or another (knowledge source) landed us in infinite regress, then everyday action and discourse would not go on through comprehension of self-consciously known objects and their known causes. (However) everyday action and discourse do proceed for someone comprehending self-consciously known objects and their known causes: when (self-consciously) I grasp by perception an object (such as a pot) or I grasp one by inference or I grasp one by analogy or I grasp one by tradition or testimony (the four knowledge sources), the (after-) cognition that occurs goes like this: "My knowledge is perceptual" or "My knowledge is inferential" or "My knowledge is from analogy" or "My knowledge is testimonial."
>
> And motivation to seek righteousness (*dharma*), wealth, pleasure, and liberation proceeds through these comprehensions (whereas if there is doubt, no such goal-directed activity would occur), as likewise motivation to reject their opposites. Such discourse and action would cease (to be possible for such a subject) if what is alleged (justificational regress) were indeed to hold. And it is not the case that there is action and discourse other than this (that proceeds on the basis of such comprehensions, such final comprehensions) that would land us in infinite regress whereby the alleged no-stopping-point would really obtain.[7]

The *tarka*, "suppositional reasoning," at the end is the argument that otherwise we would not proceed unhesitatingly but we do.[8] It is also interesting that the practical pursuits mentioned as guided by second-order, reflective knowledge are: "righteousness (*dharma*), wealth, pleasure, and liberation." In shoring up confidence on such weighty matters, on the big questions of life, philosophy has purpose.

Nyāya has much in common with both of the two most prominent forms of what is now called internalism in analytic epistemology. The school embraces both a kind of foundationalism, although not the Cartesian variety, and coherentism as shown in the concept of *siddhānta*, which is a cluster of bits of knowledge within one's worldview.[9] "Established tenets" serve as premises for inferences throughout the literature, or are explicitly conclusions of arguments formally given. They are also winnowing devises for testing new views, whether of an opponent's school or a new discovery. The presumption is that we accept testimony, but not that which is "defeated in advance" (*bādhita*) by *siddhānta*. Thus we encounter the school's coherentism, a view whose counterpart in the West is criticized for its acceptance of circular reasoning. But a circle means that we have the resources, potentially, to answer challenges that are themselves only potential. The reason that there are just certain (quasi-) basic beliefs and not simply a circle of mutually supporting opinions is that only certain beliefs are putatively the results of perception and the other sources. So there is also a moderate foundationalism in Nyāya's epistemology. Let me elaborate.

FALLIBLE FOUNDATIONS

Nyāya takes veridicality as a cognitive default: a presentational experience, *anubhava*, whether perceptual, inferential, analogical, or testimonial, and whether veridical or non-veridical in fact (pseudo-perceptual, etc.), is to be taken to be veridical unless counterconsiderations are evident. The position is pragmatically motivated but that is not my present point which is rather the defeasibility thesis. Nyāya subscribes to the principle, "Innocent until reasonably challenged."[10] There is a fallibilism implicit here that seems to be motivated by the school's realism and empiricism. Objects, excepting cognitions themselves as known apperceptively, are known through processes that are not immediately introspectable. In perception, for example, the working of the process of object-organ connection is complex and subject to environmental factors such as lighting. All the other sources depend on the *pramāṇa* status of perception. Sometimes environmental or other abnormalities occur, and produced are non-genuine, false (in two senses) perception-like cognitions, etc., as indeed sometimes we find out, being able to explain the error ("Well, tin looks a lot like silver").

Thus although Nyāya embraces an infallibilist concept of a knowledge source, neither knowledge which has not been certified nor that which apparently has is immune from the possibility of doubt, of meaningful doubt. With the exception of an apperception cognizing a target's content, any cognition could prove to be false/non-veridical, no matter how diligently we have checked, although with some repeated perceptions and commonly performed inferences the barrier to doubt would be high.

Nyāya philosophers are fallibilists about occurrent cognitions with the one exception. The possibility of error about some indicated external thing seems ineliminable. Apperception, the "introspection" of some Westerners, is the sole exception (and not all Nyāya philosophers agree that an apperception has to be true).[11] The mainstream view, which becomes prominent only with Gaṅgeśa and New Nyāya but which is implicit in Vātsyāyana and the early Naiyāyikas,[12] is that the peculiar objects of apperceptions are cognitions themselves and other psychological properties. It is thought that there are no intermediaries to consciousness becoming aware of an immediately preceding bit of consciousness including what it is about, its intentionality. An example of an apperception that makes the point plain would be a cognition C^2 whose object or target is an immediately prior cognition C^1 apperceptively cognized as a cognition with *a*-as-F objecthood whether or not *a* is an F in fact. Other types of object cognized exist independently of our consciousnesses, and the processes of knowing are mysteriously indirect (relying on uncognized physical elements). The objects of cognition and action are causes of—and not just objects of—different individuals' truth-hitting mental events. They are external to anyone's individual cognition, whereas cognitions as objects are not in this way intersubjective and external. In sum, processes of cognitive generation are not open to direct cognitive grasp except in the case of apperception. Many factors in the generational process are not directly cognizable. This transcendence of objects to consciousness leads Nyāya to embrace cognitive fallibilism, it seems to me. The whole range of cognition that is truth-directed (*anubhava* = "freshly informative mental event") has as its normal nature to be veridical in fact, but only with apperceptions are our cognitions/beliefs guaranteed to be true or veridical.

The direct results of perception, inference, and testimony count as basic, potentially resolving disagreement without requiring further justification. And just like any new bit of information, putative identification of a belief's pedigree in a knowledge source also enjoys a default status of a presumption of truth. This modest foundationalism is supported, as we have seen, by the argument (*tarka*) that we couldn't get along in the world without relying on the results of perception and the rest. On the second level, where we are called to check a belief's pedigree or to prove it by inference, the principle also holds. Certification we can do, fortunately, when some bit of knowledge is drawn into question. We have working definitions of perception, inductive procedure, and credential-checking in the case of testimony. We employ them as the occasion demands.

That Nyāya embraces such a subjective variety of justification is evident in its concept of pseudo-certification, certification that looks right from a first-person point of view but that is misleading in fact.[13] Apparent certification can be defeated by S's coming to learn something that undermines or rebuts a putatively certificational pseudo-inference, but genuine certification requires that there be no ultimate defeater in fact, i.e., that S's evidence for regarding a cognition as veridical would hold no matter what else she comes to know (*bādhaka-abhāvāt*). In particular, a pseudo-perceptual claim can be trumped ("That is yellow" said by the subject afflicted with hepatitis, a stock example along with the two moons "seen" by the astigmatic) and corrected by an explanation itself built up from perceptual evidence, and just what defeats what in what circumstances is a large topic for Nyāya and other classical epistemologists. It is recognized that when faced both with a cognition "F*a*" for whose knowledge-source generation there is positive evidence and with "not-F*a*" for which there is also evidence we may not know which is true. Veritable doubt calls for investigation, and we do not have knowledge if we have doubt that is genuine. Nevertheless, an unchallenged belief does not have to be certified to count as knowledge.

It does, however, have to be in principle certifiable. Nyāya holds that any bit of knowledge is in principle certifiable (that it is knowledge is knowable),[14] though a subject S might not have the resources at a time *t* to certify a cognition C of hers that has been source-generated. Thus "certifiable" here is to be understood in the weak sense that S could certify C under optimal conditions. The prospect of certification may be remote while a cognition is nevertheless a knowledge episode. This is because we

naturally trust certain types of cognition to present the world as it is and couldn't get along in it otherwise.

Trust in cognition is understood dispositionally. And it can be built up—let me expand on the point—by certification. Not only does certification firm up a person's confidence, a certified belief that *a* is F would normally prevent one from accepting a pseudo-inference that *a* is not F. To repeat, depending on other factors, new information could defeat "perceptual" warrant, undermine apparent inferences, and draw into question previous testimony. But typically by knowing, for example, that fire is hot, we reject an apparent proof that fire is not hot. Our dispositions in this and similar cases would be, if not reinforced by actual certificational inferences, so ripe for reinforcement that it is conceded by some Nyāya philosophers—although self-certification is by them strictly denied—that the second-order veridicality of a veridicality-confirming inference may appear self-evident.[15]

We fortify dispositions by practice ("training") as when by frequently recalling a certain event we make its future recall comparatively easier. In other words, our acceptance of the conclusion that fire is not hot is prevented—defeated in advance, so to say—by a firm disposition to act (and speak) as though it is hot. Defeaters are mental causes. They are bits of knowledge and dispositions formed therefrom that prevent or correct mistakes, counterconsiderations that prevent acceptance of views or lead to their relinquishment. It is a causal law that a cognition that *p* blocks or prevents a cognition that ~*p*. The one could not be the other's successor. New information would have to intervene bringing *p* into doubt. Similarly, the perceptual cognition required in the paradigm case of inferring fire from smoke has causal relevance. The veridical inferential cognition that there is fire on yonder mountain is prompted by a smoke experience along with a dispositional association of fire with smoke, firm memory of a pervasion or invariable connection between the two types of occurrence, fire and smoke. The dispositional association of fire and smoke gets aroused by a smoke perception and infused into a "consideration" (*parāmarśa*) that grasps not just smoke but smoke-as-qualified-by-smokehood-as-pervaded-by-firehood, triggering occurrent inferential knowledge. Statements may also have causal relevance, generating knowledge in a hearer or, in a debate context or a scientific treatise (*śāstra*), blocking acceptance of an opponent's views and establishing right positions (*siddhānta*). In other words, Nyāya's causal picture extends to the second level of certification, where there, too, there may be error. And although certification involves a voluntary act, mental causes are perfectly legitimate according to Nyāya's Humean or interactionist dualism, it bears pointing out.

A few words more on the principle of default un-self-conscious justification as holding on the second level of self-conscious certification which depends on apperception. Apperceptively we know when we are perceiving something. That is to say, we know when we attend to the perceiving. Similarly, we know when we have made an inference if we attend to the question (at least with sufficient patience having learned to reconstruct inferences), and so on. Thus we try to answer a question, resolve a doubt or bit of controversy by saying, "I saw it," "There is this inference," and "S told me so." Veridicality is assumed at the second level, because, to give the quick answer, apperception is a form of perception. There is also, as on the first level, always a possibility of error, not that a scoped cognition has occurred (a fact that is immediately and indubitably known), but that the scoped is *pramāṇa*-born. We cannot arbitrarily call an end to controversy. But it can and does end, and in these ways supplemented as the case may be by *tarka*, "suppositional reasoning."

EPISTEMIC EXCELLENCES AND DEFECTS

My interpretation finds Nyāya's epistemology to have internalist features despite its talk of causal processes. One is the concept of pseudo-certification, as pointed out. More importantly, however, there are the ways we come to recognize the results of genuine *pramāṇa*. Much theoretical attention is devoted to special epistemic properties called excellences (*guṇa*) and defects (*doṣa*) which, given doubt or desire to know, are said to be signs of knowledge-source operation and thus key to certification and the establishing of right positions in philosophy as in everyday life. Now these properties have to be cognized. They are labelled from an epistemic perspective. They are "excellences" and "defects" from an epistemic point of view. For instance, one may make an inference and act on its basis, but to certify that the conclusion drawn is the result of inference as a knowledge source is to check the process to make sure that it meets certain conditions including being based on knowledge of a pervasion (*vyāpti*) of F-hood by G-hood, considering an inference from something *a* as an F (F*a*) to its being a G (G*a*), a fact confirmed with reference to positive correlations—other things both F and G—or negative correlations—things not-G and not-F—or both. To be sure, such epistemic excellences are themselves supposed to have causal relevance, even in inference. They are both properties figuring in causal laws and signs to us of knowledge sources. For example, our having cognized other things as F and G is causally responsible (in part) for our new inferential knowledge.

In other words, when doubt arises, identification of knowledge sources and "excellences" and "deficiencies" as epistemic properties becomes relevant, answering questions, restoring confidence, and ending dispute. Much about the process, for example, of perceptual generation of knowledge is extraneous to certification in that certain causal factors—atoms and their configurations, say Nyāya philosophers in illustration—are not readily discerned.[16] Epistemic excellences and flaws are factors in belief-generating-processes that make it evident to us that it is a genuine knowledge source responsible for a belief in question and no mere pseudo-*pramāṇa*.

Each separate knowledge source has its own peculiar excellences and deficiencies; indeed there are several subspecies. We shall look at many of these in chapters to come, on the individual sources. Before taking the plunge, let us consider a problem that haunts the Nyāya project overall, the question of how to identify perception (etc.) in all of its epistemically relevant subspecies. For example, Nyāya recognizes that the necessary conditions for perception of an absence, "There is no pot on the floor," are different from those for perception of a presence, "The pot is on the floor." Once special conditions are identified within subspecies of knowledge-generator, we have to wonder about the boundaries of the perceptual, etc. What counts as a sensible characteristic and why?[17]

THE GENERALITY PROBLEM

Nyāya faces a problem of individuation of cognitive processes, a problem it shares with analytic reliabilism. Analytic epistemologists identify a so-called generality problem afflicting reliabilist theories in particular: How are we to differentiate doxastic, i.e., belief-forming processes in an epistemically relevant fashion?[18] How do we chose the candidates whose track records show them able to confer justification? We should not choose perception in general, as we normally speak in English, since it is fallible and indeed too prolific in generating false beliefs, being reliable only in specific circumstances. As mentioned in Chapter 1, perception as commonly understood in English is not Nyāya's *pratyakṣa*, which as factive I am tempted to render "perception*." In the broader English sense, perception is reliable in the sense of "truth-conducive" only under certain conditions such as proper lighting in the case of vision. Only then are sight and on on trustworthy.

What are the salient types of knowledge source? Are sight and hearing separate sources? What is the source of knowledge of psychological properties such as pleasures and pains? Is there a special source for knowledge of absences, as claimed by the Bhāṭṭa Mīmāṃsaka? What are the types of inference? Is *arthāpatti*, "circumstantial implication," a separate knowledge source, as claim Vedāntins as well as Mīmāṃsakas? Are there invariant criteria for testimonial expertise? With regard to these questions, which drive the research of several prominent Nyāya philosophers, the main lesson, it seems to me, is that specific rules have to be formulated for subtypes of knowledge source such as vision. Naturally Nyāya philosophers do not fold up their tents in the face of their generality problem but work at specifying rules and subrules. They stress that the special excellences that indicate knowledge sources do vary—in the case of perception according to sensory modality and other factors—as do common epistemic deficiencies. There are nevertheless common rules and common signs.

Nyāya does indeed share with reliabilism the problem of specifying appropriate conditions governing subspecies of perception and the rest of the *pramāṇa*. But it seems to me Nyāya's problem is distinct and not as severe as the reliabilist's because of the understanding of *pramāṇa* as factive. By holding candidates to the highest standard—one-hundred percent reliability—entries to the field are severely restricted. The sources as conceived by Nyāya may well be too restricted—there seem to be bits of knowledge not generated by any of Nyāya's four (a topic for our last chapter)—but Nyāya does not have the opposite problem of letting the actually false and unreliable count as source-generated. Furthermore, Nyāya begins with the assumption that normally presentational experiences are veridical as well as with the idea that there are perfectly reliable knowledge sources. It does not have the problem of how to get started in carving up the pie in that, with the exception of analogy, its three sources are commonly so regarded in everyday discourse (*vyavahāra*).

It is worth dwelling on this last point. We do in English, too, commonly recognize perception and the others as certificational. That this is a common human practice (not just a language game in Sanskrit) Vātsyāyana and company may be interpreted as intent to show in their comments on *Nyāya-sūtra* 2.1.20. Both certification and discertification in the Nyāya fashion are commonly expressed in English, for sometimes we say, for example, "S is indeed over there, since I see him," and "You couldn't really have perceived S because condition Y does not hold" ("You can't see anyone from this distance").

Nyāya philosophers bring to bear on their generality problem theorizing about universals and quasi-universals (*upādhi*) and the signs whereby such critters are recognized. Gaṅgeśa and his followers embrace the view that perceptionhood, inferencehood, and so on are, well, not strictly speaking true universals, *jāti* or *sāmānya*, but rather kinds that are themselves known in the ways universals are known, namely, by concrete indicators of instances in invariable relationships, such as, for cowhood, possession of a dewlap. Other characteristics that make the cowhood universal manifest in what is called "recurrent cognition," *anugama-pratyaya*, are a cow's shape and face and horns. Recurrent cognition is a kind of perception informed by previous cognition of the same type of thing, "A cow, another, and another, and so on," in the example of the Vaiśeṣika philosopher Praśastapāda (sixth century).[19] Verbalizable perception is concept-laden, *savikalpaka-pratyakṣa*, and concepts are formed by prior experience. Universals (and quasi-universals) are posited as the unifiers of the unity among a group of individual objects perceived.

There are technical, nitpicking reasons why being-a-perceptual-cognition, being-an-inferential-conclusion, and so on are not to be counted genuine *jātis*; veridicality is not itself a universal, Gaṅgeśa takes great pains to show as nevertheless he provides definitions that cover all cognitions that are veridical.[20] Raghunātha says explicitly that the unanalyzable *upādhi* or "surplus property" is recognized through recurrence just as is the true universal or *jāti*.[21] The point is that the unanalyzable *upādhi* is not entirely

mind-imposed—maybe in its precise contours, or maybe it is a thoroughly objective property—but in any case it is recognizable by others, behaving mostly like a universal. Veridicality is not a true universal because it is not "locus-pervading," *vyāpya-vṛtti*, whereas cowhood is present in every part of a living cow, horns to hoofs. A cognition can be in one part veridical and one part not, like a monkey in contact with the branches of a tree but not in contact with the roots. A cognition of "This is silver" in the face of mother-of-pearl is veridical in presenting a "this" (there is something there to be picked up) but non-veridical in its silverness portion. All verbalizable cognitions have both qualifier and qualificandum indications within their intentionality or objecthood (*eka-vṛtti-vedyatā*).

Let us not get bogged down now in technical considerations that are mainly irrelevant to epistemology. The point is that being-a-perception and the others are properties that like true universals are known by certain repeating characteristics, such as, in the case of perception, being-immediate or presenting-its-object-immediately as opposed to being-an-inferential-result which concerns an object known mediatedly, unperceived fire on yonder mountain, for instance. Some *pramāṇa*-indicative properties may take some work to uncover, such as "being-produced-by-contact-of-sense-organ-and-object." But though unnecessary, identification of a cognition as being so produced would be sufficient to generate the recognition of the type, namely, that the cognition is perceptual. And this is, as we have seen, one way a justification regress can terminate. A cognition's being found to be perceptual, inferential, analogical, or testimonial ends the matter, unless there is a good reason to doubt the second-order judgment that the first-level is *pramāṇa*-born. Good reasons, of course, sometimes arise. But unless they do, we may go about our business.

I have said that perceptionhood is not in the technical terms of Nyāya a true *sāmānya* or *jāti* but only a quasi-universal. Nevertheless, this abstract character is thought of, as we might say in less technical English, as the character it is as the result of a natural process involving a sense faculty in relation to an object presented, a process involving a sense organ working in optimal conditions, we might say, and it is really irrelevant the precise place of the entity in the ontological system. The point of calling or at least treating it as a *jāti* is that although only quasi it is known as a universal is known, as I have explained. But some Nyāya philosophers do appear to take it to be a genuine natural kind, for example, the late Navya textbook-writer Viśvanātha of the seventeenth century.[22]

Also on point is the famous *Tattva-cintā-maṇi* commentary of Mathurānātha, likewise of the seventeenth century, on a couple of sentences from Gaṅgeśa about *pramā*, "veridical cognition," dividing into four types, the perceptual, inferential, analogical, and testimonial. These are mutually exclusive but not exhaustive of all *pramā* since there can be cognitions that are veridical in part as well as accidental *pramā* that are not generated by the four types of knowledge source and thus not knowledge (*prāmāṇya*).

Gaṅgeśa says, immediately after defining veridicality in general, that there are four subkinds: "And such veridical cognition (*pramā*) occurs in four varieties, in that the perceptual, the inferential, the analogical, and the verbal are distinct. In this way, there are proximate instrumental causes for the four—i.e., 'means to veridical cognition,' *pramāṇa*—in four varieties, in that perception, inference, analogy, and testimony are distinct."[23] Mathurānātha comments:

> He (Gaṅgeśa) divides that which he has defined with the words "And such veridical experience (comes in four varieties)"—that is to say, veridical experience (*pramā*), in the form of an "(informative) experience whose predication content hits that which has it" (*tadvati tat-prakāraka-anubhava*)—this is the meaning. The meaning of his use of "in four varieties" is that these four are basic kinds of (presentational or informative) experience (*anubhava*) non-mediatedly, with no universal intervening (between being-a-perception, etc., and being-an-experience, *anubhavatva*). That these four basic, non-mediated kinds of experience are veridical experiences, well, this is the implication (although veridicality is no intermediate kind). Thus that some individual veridical experience fall outside the quartet would cause no harm (to our view).
>
> Against the objection that this quartet of (so-called) natural kinds (*jāti*) not being ordered as pervaded and pervader (with respect to being-an-experience, *anubhavatva*, unlike being-earthen and being-a-substance) there could be the fallacy of cross-classification in any single veridical experience (which could be both, e.g., a perception and an inference), like being-an-element and having-a-finite-form (which are also not ordered as pervaded and pervader and thus are not true *jāti*, natural kinds, since *ākāśa* is an element but does not have finite form and *manas* has finite form but is not an element), he (Gaṅgeśa) says, "Perception, (inferential cognition, and so on)," (spelling out explicitly) "perceptual knowledge, inferential knowledge, analogical knowledge, and testimonial knowledge," because individual veridical cognitions do mutually divide up in this way (i.e., if the one, then not the other). And in this way there is no cross-classification because individual veridical cognitions, which support (the abstract character, being-a-perception and so on), do mutually divide up in this way. This is the upshot.
>
> Having divided up veridical cognitions, he goes on to divide up knowledge sources. With the words, "in this way," and "in four varieties," he implies that a quartet of properties (the perceptual as a *pramāṇa*, the inferential as a process of knowledge, the analogical, and the testimonial) splits up the knowledge sources, that to the quartet of properties splitting up the knowledge sources can be attributed instrumental causality for knowledge (i.e., for veridical cognition, *pramā*).[24]

In other words, perceptionhood and the rest are basic kinds of presentational or informative experience (*anubhava*), all pervaded by veridicality although veridicality is not a natural kind and there can be accidentally veridical cognitions. Another kind of *anubhava* is suppositional reasoning (*tarka*) as well as imagination (*vikalpa*) and a miscellaneous group of false cognitions, some misleading, and some, like my pseudo-sight of a double moon (I have astigmatism), not misleading in that they are known to be illusions when they occur. Being-a-memory, *smṛtitva*, contrasts with *anubhavatva* as a second kind of cognition, whose instances divide into the correct, *yathārtha*, and the incorrect, *ayathārtha*.[25]

Personally, my impression is that New Nyāya philosophers often use the terms '*jāti*' and '*upādhi*' loosely, almost interchangeably, although the official doctrine, due to Udayana, is that a candidate that fails the cross-classification test or another "universal-blocker," *jāti-bādhaka*, is not a true universal but only an *upādhi*, an accidental or mind-imposed kind.[26] There is also the blocker of failing to be locus-pervading as cowhood of every part of a living cow, as we noted previously. The reason the *upādhi*/*jāti* distinction is often less than sharp is that, one, not many candidates pass all the tests, and, two, to be a candidate, that is to say, to be at least an *upādhi* character that is evidenced by recurrent cognition and that is either pervaded by or pervades another character, is all we need to carry out inferences, inferences being underpinned by pervasion relationships (*vyāpti*) between class-character terms. Pervasions do not have to be between the extensions of two true universals, although paradigmatically that's how we may think of the matter. Pervasion of one *upādhi* by another is sufficient to permit inference. But if we do want to stress the depth of a categorial cut, a distinction between *upādhi* and *jāti* can be made, as does Mathurānātha in the previous passage. So if there is any genuine natural kind here, it is being-a-perception along with the others which, as Mathurānātha sees things, are basic kinds of presentational experience all of which are veridical.

Recurrent experience (*anugama-pratyaya*) can be of the class character itself, as in the example of Praśastapāda, "A cow," "Another," "Another," and so on, or of an indicator of a class character, such as "A dewlap" indicating a cow and cowhood. Note that there is nothing essential to a cow in having a dewlap. That is simply a reliable indicator of something being a cow. Similarly, the perceptionhood or inferencehood of a cognition in question can be known by indicators, called *guṇa*, "excellences," to bring out, as I have said, their epistemic relevance.

In sum, we are able to find marks correlating with individual knowledge sources (*jāti-vyañjana*) whereby we sift out *pramāṇa* pretenders such as guessing. There are no recurrent indications of a connection between guessing and the truth of the thing guessed—there is no discernible pattern, no correlating marks, unlike the case with perception, inference, analogy, and testimony—and so guessing is no *pramāṇa*.

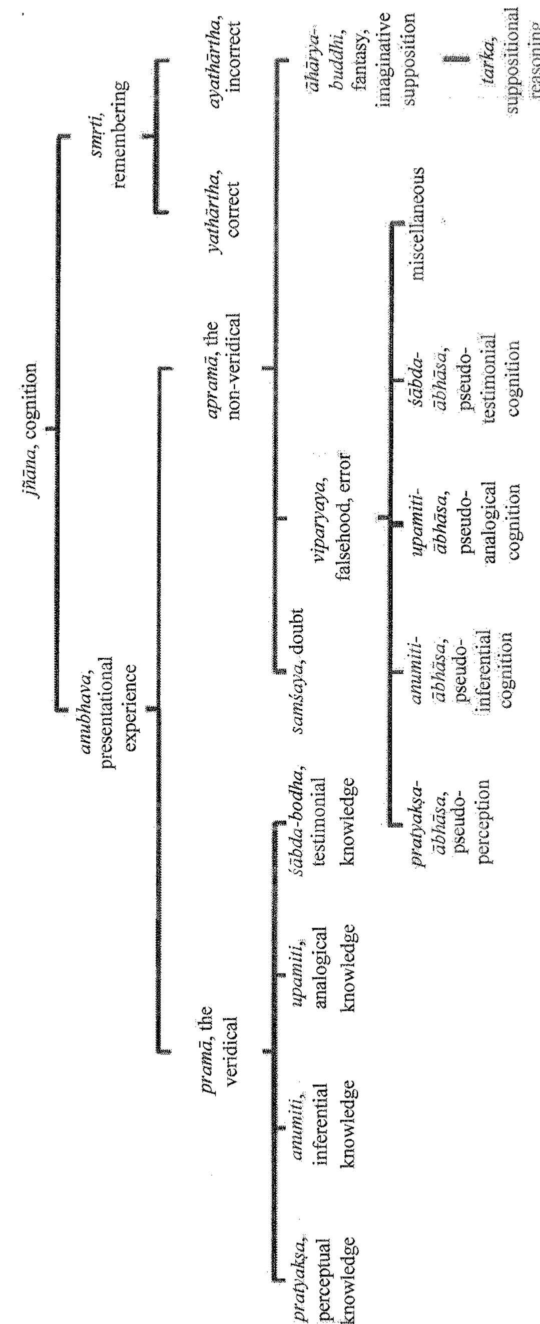


Figure 2.1 Types and subtypes of "cognition," *jñāna*.

Finally, there are famous issues of whether certain candidate sources are reducible to one of the four. Nyāya often takes a reductionist position but is in principle open to recognition of additional sources. This comes out pretty clearly in, for example, the postulation of analogy, which is said to have testimony as well as perception as auxiliary causes, as well as in Nyāya's defense of testimony against Buddhist and Vaiśeṣika reductionisms.[27] This is an important point which will be expanded in Chapter 7 in connection with Nyāya's apparent failure to account for *a priori* knowledge.

Despite such championing of testimony and analogy, Nyāya argues that theoretic simplicity and other considerations counter, for example, the Bhāṭṭa Mīmāṃsaka insistence (1) that non-cognition, *anupalabdhi*, is the source of knowledge of absences and (2) that "circumstantial implication," *arthāpatti*, is not a form of inference but a *pramāṇa* on its own. Both Old and New Nyāya take the contentions seriously, but object to the adding of a separate source in each case, arguing that the origination of absential bits of knowledge, etc., can be explained perfectly well using only the four sources. We shall take up the topic of circumstantial implication in the inference chapter (Naiyāyikas say it is the same as negative-only inference) and non-cognition in the next chapter which is on perception.

Let me emphasize just one further general point, namely, that taxonomical questions arise aplenty in classical Indian epistemology, as we can see by taking an overview: Yogācārins accept two sources, perception and inference, Bhāṭṭa Mīmāṃsakas along with certain Vedāntins accept six, Nyāya's four plus non-cognition and circumstantial implication, Prābhākaras five, rejecting non-cognition but accepting circumstantial implication, the otherwise Naiyāyika Bhāsarvajña finds only three, seeing analogy as a form of testimony, and other positions are taken by Vaiśeṣikas, Jainas and other players. (One school accepts only perception, rejecting even inference, the Cārvāka, whose *argument* that perception is the only source becomes a (laughing) stock example of self-defeating reasoning.)[28]

BELIEF-WARRANTING *TARKA*, "SUPPOSITIONAL REASONING"

Somewhat surprisingly, Nyāya holds from the earliest that apparent certification may not be enough to warrant belief in some instances. Even if our beliefs/cognitions have indeed been generated by processes that would be counted *pramāṇa* did they not face counterconsiderations, in facing counterconsiderations—in being reasonably challenged—they are not trustworthy and do not guide unhesitating effort and action. There is a social dimension to knowledge, where reasoning reigns resolving controversy in ways over and above the sources. These are the ways of *tarka*, "hypothetical" or "suppositional reasoning." Paradigmatically, *tarka* is called for in order to re-establish a presumption of truth in favor of one thesis that has putative source support against a rival thesis that also has putative source support, a thesis and a counterthesis both backed up by, for example, apparently genuine inferences (the most common situation) or by competing perceptual or testimonial evidence. By supposing the truth of the rival thesis and (in Socratic style) showing how it leads to unacceptable consequences or breaks another intellectual norm, one repossesses a presumption of truth, provided—the classical reasoners never tire of emphasizing—provided one's own thesis does indeed have at least the appearance of a *pramāṇa* in its corner.[29] Nyāya philosophers join a consensus across schools that such arguments are not in themselves knowledge-generators although they can swing the balance concerning what it is rational to believe.

"Suppositional reasoning," *tarka*, is what a philosopher is good at, drawing out of implications of opposed views and testing them against mutually accepted positions (*siddhānta*), according to, broadly speaking, criteria of coherence but also of simplicity. Here we come to the vital center of Nyāya, the secret to the life and prosperity of a Nyāya philosopher, which is reflected in honorific appellations, for example, "*tarka-śiromaṇi*," "Crest-jewel of Reasoning," and book titles, *Tarkāmṛta*, "Immortal Nectar of Reasoning," *Tarka-sāra*, *Tarka-saṃgraha*, and so on (I count more than fifty philosophy titles beginning with the word). "Dialectical reasoning" is the translation I have used in earlier works, since *tarka* presupposes a context of controversy.[30] *Tarka* focusing on simplicity ("lightness") or "theoretic cumbersomeness" (*lāghava* and *gaurvava*) is not so much suppositional as comparative. To show theoretic "lightness" is to use *anukūla-tarka* as opposed to *pratikūla-tarka*, i.e., suppositional reasoning that is "favorable" as opposed to "unfavorable," "with the grain" as opposed to "against the grain." The latter is not the sole but is the standard variety, showing that an opponent's hypothesis (or an opposite thesis, $\sim p$) violates an intellectual norm.[31] There is at least one other form of "favorable" *tarka*, which is having one's own thesis presupposed by the opponent's while the reverse does not hold—see (6) in the next paragraph. Still, usually *tarka* is thought of as "unfavorable," only indirectly supporting a thesis p by establishing a counterconsideration against a rival, $\sim p$, or, sometimes, against a rival hypothesis, q, which would explain a set of commonly recognized truths in different terms.

Udayana (eleventh century) appears to inherit a six-fold division of *tarka* according to the nature of the error in an opponent's position, and expressly lists five types (the sixth, "contradiction" or "opposition," *vyāghātatā*, either being assumed as the most common variety, or subsumed under Udayana's fifth type, "unwanted consequence"). Philosophers from other schools present distinct but overlapping lists. The Nyāya textbook writer, Viśvanātha, of the early seventeenth century, mentions ten, Udayana's five plus five more, many of which are used by the Advaitin Śrīharṣa (probably Udayana's younger contemporary) among other reasoners.[32] They are: (1) *ātmāśraya*, "self-dependence" (begging the question); (2) *anyonyāśraya*, "mutual dependence" (mutual presupposition);

(3) *cakraka*, "circularity" (reasoning in a circle); (4) *anavasthā*, "infinite regress;" and (5) *aniṣṭa-prasaṅga*, "unwanted consequence" (including contradiction presumably)—Udayana's five—plus (6) *prathama-upasthitatva*, "being presupposed by the other," the "first established" (a form of "favorable" *tarka*); (7) *utsarga*, "(hasty) generalization;" (8) *vinigamanā-viraha*, "differentiation failure;" (9) *lāghava*, "theoretic lightness;" and (10) *gaurava*, "theoretic heaviness."[33] There is a lot to say about some of these, but the logic of the first three errors is pretty plain: concluding A from A, or A from B and B from A, or, in a wider circle, A from B, B from C, and C from A, and so on in little circles (Nyāya *siddhānta* is a very large circle, it sometimes seems). Some of the other types will be taken up by us in later chapters. Let me close this one with a few words about self-contradiction and its varieties.

Three kinds of self-contradiction come to be recognized: in language ("My mother is barren"), in thought ("I do not know *this*"), and in action (a speaker saying, "I am mute").[34] As we saw at the beginning of the chapter, the *tarka* that establishes a presumption in favor of Nyāya's knowledge-source epistemology concerns action. People do unhesitatingly, post philosophy, pursue *dharma*, wealth, pleasure, and even liberation, *mukti*, having justified, to themselves at least, the pursuit on the basis of certified inference or testimony. Similarly, the *tarka* that refutes skepticism in general concerns action. Gaṅgeśa:

> Were a person P, who has ascertained thoroughgoing positive correlations (F wherever G) and negative correlations (wherever no G, no F), to doubt that an effect might arise without a cause, then—to take up the example of smoke and fire—why should P, as he does, resort to fire for smoke (in the case, say, of a desire to get rid of mosquitoes)? (Similarly) to food to allay hunger, and to speech to communicate to another person?[35]

The argument, which is taken from the *tarka* section of Gaṅgeśa's chapter on inference, is essentially the same as that with which Vātsyāyana opens his *Nyāya-sūtra* commentary quoted here at the beginning of the chapter. Without the confidence that presupposes knowledge, we would not act as we do.

3 Perception

Remarkably, the word 'perception' in English shares an ambiguity with its counterpart in Sanskrit, '*pratyakṣa*', both being used for (1) a mental event, a bit of occurrent knowledge that is perceptual in character, as well as (2) the process that produces it. Consonantly 'perception' will be used here, in English, rendering Nyāya, both as the name of the type of knowledge and its source. For example, my current visual experience is perception (first sense) that has been generated by a visual process also called perception (second sense). Nyāya uses two words for inferential knowledge and the inferential process (the former called *anumiti*, the latter *anumāna*), as, too, with analogy (*upamāna*), which generates analogical knowledge (*upamiti*), and testimony (*śabda*), which generates testimonial knowledge (*śābda-bodha*). But context often has to serve to disambiguate references to perceptions as bits of knowledge and perceptual processes.

Perceptual cognition or knowledge, like inferential knowledge, etc., is a type of presentational experience, *anubhava*, which is defined as experience having intentionality or objecthood, *viṣayatā*. Perception has both phenomenological character and an epistemological role. Early Nyāya philosophers move back and forth between thinking about it as richly presentational without the mediation of concepts or words and thinking about it as embedding, and justifying, certain conceptually mediated propositions. On the one hand, perceptual cognition has a phenomenological inside, richer than anything anyone could say about it or its objects, and on the other, the perceptual process plays a foundational role in giving us knowledge—and not just perceptual knowledge but also the inferential, analogical, and testimonial. As we shall see in later chapters, the other sources depend on perception as a *pramāṇa*.

The thesis tying together perception's phenomenological and epistemological sides is naïve or direct realism. If perception is phenomenologically rich, the world is too, indeed, richer, according to Nyāya.

Possibly following Kumārila (eighth century)—the early Mīmāṃsaka fellow realist who presents a barrage of arguments against Buddhist positions—Vācaspati (tenth century) uses the *NyS* definition of perception to distinguish "concept-laden" from "concept-free" perception, *savikalpaka*

and *nirvikalpaka pratyakṣa*.[1] Only the former has full propositional content. The *NyS* definition runs: "Perception is cognition generated from sense organ/object connection, not expressible in words, unerring, and determinate."[2] To bring out perception's phenomenological side, Vācaspati follows Uddyotakara (seventh century) on *avyapadeśya*, "not expressible in words." Uddyotakara:

> Perception is cognition that varies according to differences in the object (or objects) perceived. It happens to a subject S for whom the relation of word and object has not been employed (who does not know the object's name). Even if S does know the object as denoted by its name, at the time of the cognition, it happens just as if S did not know.[3]

This statement brings out early Nyāya philosophers' apparent agreement with Buddhist epistemologists of the Yogācāra school that in itself perception is concept-free, *nirvikalpaka*, free from thought and imagination, *vikalpa* or *kalpanā*. According to the Buddhists, we project ideas (*vikalpa*) and conceptually color perceptions, constructing convenient fictions according to our desires. So-called concept-laden perception, which is thus determinate and verbalizable, is really a form of inference.

Vācaspati wants to sharpen the disagreement with Buddhists he sees implicit in the way his Nyāya predecessors understand perceptual cognition as the result of a knowledge source. Thus though he agrees with Uddyotakara about the concept-free variety, he takes the last word of the *NyS* characterization, *vyavasāyātmaka*, "determinate," to refer a distinct type of perception, the concept-laden, *savikalpaka*. For the Buddhists, this kind of cognition is indeed propositional, but, they say, even sensory predication depends on ideas of unreal generality—all predication involves repeatable general terms. Thus its propositional content is suspicious just because this is not raw perception which alone is capable of presenting the real, the *svalakṣaṇa*, "that which is its own mark," the "unique" or "particular." Nyāya philosophers hold that perception is none the worse for being concept-laden in that concepts are features of the world as impressed upon the mind or self. Perception founds true beliefs, and the repeatable predicates and concepts ("cowhood") perceptually acquired and re-presented and verbalized pick out constituents of real objects, things that do re-occur (there are lots of cows in the world). For the New Nyāya philosophers, concept-laden perception comes so to dwarf in importance the indeterminate, concept-free variety that the latter becomes problematic. Perception in its epistemological role is concept-laden. Otherwise, it could not be a *pramāṇa*, and identification of it would not be certificational. Perception as a knowledge source is a doxastic, belief-generating process. Perceptual beliefs—or anyhow bits of perceptual knowledge and their verbalizations in observation statements—are dependent on concepts. To believe or say that there is a pot on the floor, one must possess the concepts of "pot" and "floor."

The importance of the Nyāya difference from the Buddhist position is easily grasped. Concept-laden perception is capable of deciding some weighty questions, according to Nyāya, for example, the endurance of self or consciousness, according to Nyāya philosophers of all periods. Perceptual recognition of an individual as the same over time is in principle of a piece with an observation that something present is currently qualified by a perceptible characteristic, in that all determinate perception involves projection, so to say, into current experience of a perceptual concept acquired previously. Concept formation is dependent on the capacities of the sense organs to gather property-wise information from objects directly sensed, and it is here that there is a role for the concept-free variety of perception—according to Gaṅgeśa and other but not all Navya Nyāya philosophers, for some of whom all seeing is really "seeing as."[4]

CONCEPT-LADEN VS. CONCEPT-FREE PERCEPTION

Kumārila mentions the cognition of an infant as an example of perception that is concept-free.[5] Phenomenologically humans would seem to have much in common with animals considering this type. However, perception, according to the great Mīmāṃsaka, does not so much divide into types as form a process with the concept-free as the first stage. Awareness of the object is only quasi-propositional in the first moment, and at the second has its content filled out to become the means whereby an individual is ascertained to have a certain character, to be a certain kind of substance or to possess a universal or an action, etc.[6]

Even a baby or an animal has some minimal conceptual capacities, or quickly develops some. Consider for example the perceptual predicate "edible." A dog has a pretty good ability to tell what's edible from what is not, and a baby less but still some of the virtue.[7] An adult's experience is much more textured when it comes to edibility, with a richer palette of concepts to inform whatever current experience. In any case, for Nyāya ascertainment of edibility or any other sensible characteristic is propositional, that is to say, can be expressed in a declarative sentence, "That's blue," for instance. For Kumārila, the pioneer of the theory, the object perceived, the lotus (or whatever), is known in the first stage as an individual whole, both in its individuality and as having a character. But the character, the thing's being blue as opposed to red, and it's being here right now, are not known without the mediation of concepts. Seeing is "seeing as" and is "shot through with words," to use the expression of the grammarian, Bhartṛhari.[8] Kumārila, unlike Bhartṛhari, is a realist about ideas or concepts, like his Nyāya colleagues, who quote him often in their own fights with Buddhist subjectivists. Concepts begin as features of things, whether as substances, universals, actions, or another category.

The Buddhists' best argument for their subjectivism (which one suspects derives more fundamentally from a commitment to the possibility of a universal *nirvāṇa*-experience, although this is not said) is perceptual illusion. Illusion proves that a perception's object is not a feature of the world but is contributed somehow from the side of the subject. A rope can be perceived as a snake, with no difference, from the perspective of the perceiver, between the illusion and a veridical snake perception. Similarly, dreams are the "perceptions" of a dreamer but do not touch reality. (Our world is a dream, say Buddhists, and we should try to become *buddha*, "Awakened.")

One way to resist the pull of the illusion argument belongs to the Prābhākara Mīmāṃsaka. Prabhākara was a renegade pupil of Kumārila with the reputation of outstripping his teacher in philosophic acumen and coming to be known as "the teacher" (*guru*) across the classical schools. The Prābhākara insists that not only is perception invariably veridical but also cognition in general, *jñāna*. Nyāya philosophers hold in contrast that illusion is a false cognition, *mithyā-jñāna*. Thus they agree with the subjectivists, that is, in the fight between Nyāya's "misplacement" view and a Prābhākara "no-illusion" or "omission" theory. For the Prābhākara, illusion is a failure to cognize of a certain sort, an absence of cognition, for example, an absence of cognition of the difference between a remembering of silver and a perceiving of mother-of-pearl when holding in hand a piece of shell and failing to cognize the difference S exclaims, "Silver!" Nyāya disagrees: sometimes a person S apparently perceives *a* to be F—has an apparently perceptual cognition embedding F*a*, a single cognition of an object as qualified (*viśiṣṭa-jñāna*)—when *a* is not in fact F, while S cannot discern from her own first-person perspective that the cognition is nonveridical. Nevertheless, the predication content, according to Nyāya as also Mīmāṃsā, the presentation or indication of F-hood, originates in things' really being F, through previous veridical experience of F-hood.

Here we touch the heart of classical Indian realism. Snakehood is available to become illusory predication content through previous veridical experience of snakes. It gets fused into a current perception by means of a foul-up in the normal causal process through the arousing of a snakehood memory-disposition (*saṃskāra*) formed by previous experience of snakes. The content or intentionality (*viṣayatā*, "objecthood") of an illusion is to be explained causally as generated by real features of real things just as is genuine perception although they are distinct cognitive types. Illusion involves the projection into current (determinate) cognition (which would be pseudo-perception) of predication content preserved in memory. Sometimes the fusion of an element preserved in memory is cross-sensory, tasting sourness, for instance, when perceiving a lemon by sight or smelling a piece of sandalwood which is seen at too far a distance for actual olfactory stimulation.[9] These are cases of veridical perception with an obvious admixture or tinge of memory. Nyāya philosophers mention them to make vivid the point that perceptual concepts can be so enlivened as to appear purely sensory when we know they cannot be. Illusion, according to Nyāya, is to be analyzed similarly, but unlike veridical cases of projection illusion involves taking something to be what it is not, a seeing or perceiving it through a "misplaced" qualifier. This means that concept-laden perception is necessarily combinational—a position taken by Gautama himself, the *sūtra-kāra*, and much elaborated by Vātsyāyana and the other commentators, in a stretch of sūtras apparently aimed at an early form of Buddhist subjectivism.[10]

Thought-laden perception, determinate perception, gets its content not only from the object in connection with the sense organ but also from the classificational power of the mind (or self). With the perceptual cognition, "That's a pot," for instance, the pot as an individual in connection with a sensory faculty is responsible for the awareness of a property-bearer, for what is called the qualificandum portion of the perception, without admixture of memory, but the sensory connection is not by itself responsible for the qualifier portion, the pothood, that is to say, the thing's classification as a pot. Now the classificational power of the mind (or self) should not be understood as innate, however, so much as the product of presentational experience (*anubhava*) over the course of a subject's life. Repeatable features of reality get impressed on the mind (or self) in the form of memory dispositions. For most adults, prior determinate cognition provides the content predicable of a particular, or a group of things, presented through the senses. That is, in perceiving *a* as an F, an F-*saṃskāra* formed by previous knowledge-source-produced bits of occurrent cognition of things F would be a causal factor. The perception's own content includes the repeatable nature of the qualifier through the operation of this factor. We see the tree as a tree.

But sometimes neither a prior determinate cognition nor a memory disposition is at all responsible for the predication content, for example, when a child sees a cow for the very first time. Rather, an "in the raw" perceptual grasping of the qualifier (cowhood) delivers it to an ensuing concept-laden and verbalizable perception. In other words, there are cases of determinate cognition where indeterminate, concept-free perception furnishes the qualifier portion independently and the ensuing concept-laden perception is not tinged by memory. Normally, *saṃskāra*, "memory-dispositions," do play a causal role in determinate perception, according to Nyāya. But sometimes an immediately prior concept-free perception of a qualifier plays the role of the *saṃskāra*, furnishing by itself the concept, the predication content, the qualifier portion of an ensuing determinate, proposition-laden perception, which is the type of cognition that founds our beliefs about the world.

If this were not an "immaculate perception" but itself a grasping of a property through the grasping of another property, we would be faced with an infinite regress and direct perception of the world would be impossible. Concept-free perception need not provide the classifying not only with second and third-time perceptions of something as F but not even, strictly

speaking, with a first-time perception, since there could be an intervening cognitive factor (such as in the stock example of the working of analogy where an analogical statement furnishes the qualifier). But with that factor again the question would arise how it gets its content, and so since an indeterminate perception has to be posited at some point to block a regress it might as well be at the start. This is the main argument of Gaṅgeśa, the New Nyāya systematizer, in defense of positing *nirvikalpaka* as a type or first stage of perception.[11]

A distinct line of reflection informs the view that determinate, concept-laden perception is a cognizing of a qualificandum through a qualifier: things have multiple properties some of which normally go undetected on any given occasion of experience. I can see Devadatta without seeing what he has on his back. Wholes are implicit in their parts, the very notion of which makes no sense cut off from that of the whole: parts are parts of a whole.[12] And if I can touch what I have seen, then when I am only touching the thing, I will not normally be aware of the thing's color perceptually. If the ontological layering of things having qualifiers were not reflected in the causal ordering of an indeterminate perception feeding, so to say, the determinate, then perception of a qualificandum should entail that the "thick" particular be presented, i.e., the thing with all of its properties, and, as Gaṅgeśa argues, a blind person in touching a yellow piece of cloth would know its color as yellow.[13]

Nevertheless, for all intents and purposes, perception embodies beliefs. More accurately, a perceptual belief is the result of the operation of perception as a knowledge source. Everything that is nameable is knowable and vice-versa. There is nothing that when we attend to it cannot bear a name, for we can make up names. We can in principle verbalize the indications of our experience, though many of them are not named since we are indifferent (pebbles perceived along the road). Concept-free perception is the Nyāya rendering of our ability to form perceptual concepts by attending to perception's phenomenological side. Epistemologically, it plays no role, since it is itself a posit and is unverbalizable and not directly apperceived.[14] We shall return to the point about apperception in the last section of the chapter. Let us turn now to look at determinate perception's importance to what we may justifiably believe and to conclusions of philosophy.

RECOGNITION

Typically verbalizable perception is infused with concepts formed by previous experience. But presentational experience is not just of qualifiers but also of individuals, called qualificanda (*viśeṣya*), i.e., individual property-bearers, which come into connection with the sense organs and are known at once through one of another property they bear. Indeed, individuals

bear whole complex groups of properties through which they are known. Although the notion of a qualificandum is an abstraction from presentational experience—a bare particular is never encountered directly, at least not as bare—perception forms not only qualifier-type dispositions but also memories of individuals. For example, a subject S can remember Devadatta whom S saw yesterday. Such a mental event is called a remembering, *smaraṇa*, which occurs in the present but whose object is not only past but known as past. Perception, in contrast, is about an object qua qualificandum currently in connection with one or more of the sense organs. Sensory connection with properties is said to work through, or presuppose, connection with the property-bearer.

Now having acknowledged the combinational role of concept-laden perception as presenting a qualificandum *a* as bearing a property F, Nyāya philosophers extend the—let us keep in mind—thoroughly legitimate role of memory dispositions in perception to include recognition of an object as the same qua qualificandum as an object experienced in the past. For example, S's recognition of Devadatta, "This is that Devadatta (whom I saw yesterday)," is taken to be perceptual. The apparent co-intentionality of the "this" and the "that" presented—or the co-referentiality of the two terms used in the characteristic verbalization—is not a statement of synonymy since the "that" indicates (elliptically) an object as past (i.e., temporally distant, since otherwise "this" would be the appropriate term). The "that" may seem dubiously perceptual, but Nyāya sees little difference in a *saṃskāra* playing a causal role here from its playing a role in other cases of determinate perception. The difference is that in recognition as in remembering we are aware that the thatness is a matter of memory and past experience whereas this is not the case with a simple perception of a sensory characteristic.

The Nyāya position is that a recognition is a single determinate perceptual cognition. The Prābhākaras hold in contrast that it is two cognitions, a perception (accounting for the "this") and a remembering (accounting for the "that"). Buddhists argue that the "this" and the "that" indicate distinct realities, and the apparently recognitional cognition, "This is that Devadatta," is strictly speaking false. These are the major positions. With the stock example, we are to imagine a subject S encountering Devadatta in the street and identifying him perceptually. Thus "This is that Devadatta" has to be at least in part perceptual, everyone agrees. It's the meaning of the "that" that's controversial.

The Nyāya view is that just as in the case of a simple perceptible characteristic such as blue (in "It's blue") where memory is sparked to project the mentally retained blue concept into the perception accounting for the full concept-laden way the thing is perceived along with the possibility of verbalization, the same holds for the "thatness" in a recognition. On the verbal level, 'that' is an anaphor standing for Devadatta as experienced earlier, yesterday, let us presume. For Nyāya, Devadatta now currently perceived

is qualified by thatness in fact. Thus although a recognition depends on memory for the "thatness" cognitively, the thing recognized is the "that" in fact. The connection with the qualifier may run through the mind of S, but there is nothing in principle wrong with such a causal sequence. Similarly, cognition of an absence, "There is no elephant in this room," has the elephant, the absentee, what is called the absence's "countercorrelate," *pratiyogin*, furnished by the cognizer S. This is an objective truth nonetheless, given that there is indeed no elephant.

There are limits on the properties that may be sensorily evident. It is a big task to specify these. But recognition is commonly considered not only true but perceptual—it is a matter of *vyavahāra*, everyday discourse—and Nyāya philosophers claim that they can account for its veridicality better than rival views that do not respect the common pattern of speech. It is not a stretch, they imply, to extend the projection power of memory to include certain properties as past. In remembering, we are immediately aware that an object is past, and something similar happens in recognition. An important piece of background here is the position of the Bhāṭṭa Mīmāṃsaka, the follower of Kumārila, on the property "cognizedness" as created in a thing by the fact of its having been cognized. A second cognition on the part of a subject S targeting the cognizedness, "The thing has been cognized (previously by me)," proves the previous cognition's existence. The Bhāṭṭa position is taken to be that the cognizedness can be manifest perceptually.[15] Nyāya does not much disagree, although the role of the mind is better understood, it seems to me. Both schools hold that something perceived can be known immediately as the same thing encountered in the past ("There's the pot for which I have been looking"). Perception thus establishes the existence of things that endure. More precisely, this is the conclusion of an inference, but perceptual recognition provides the crucial evidence, namely, that the thing experienced in the past (and thus qualified by "thatness") is this thing here.

Now every Nyāya philosopher that I can think of, from Gautama on, exploits the presumption of truth for the recognitional, "This is that Devadatta," to infer the existence of an enduring self or cognizer, not just the plainer fact that Devadatta has endured.[16] Uddyotakara rules out rival explanations with the following considerations: (a) no subject can remember what another has perceived; (b) no sensory property proper to one sense organ (e.g., sight) can be identified with a property proper to another sense organ (e.g., touch) except by way of the identity of a property-bearer, the qualificandum ("This color is that touch" is disallowed although "This blue thing is that which is in contact with my hand" is legitimate); and (c) cognitions produced by distinct instruments cannot be identified ("This visual cognition of the thing as blue is the same as that testimonial cognition of the thing as blue" is disallowed as is also a claim of identity between a visual cognition and a tactile one although "My perception of a blue thing has as its object—qua qualificandum—the same thing as that which Devadatta told me about" is legitimate).[17] Thus we get the gist and see the direction of the Nyāya realist reasoning. But let us desist from examining further these, shall we say, metaphysical arguments, since they are complex and have occupied whole monographs both in the classical literature and modern scholarship.[18]

PERCEPTUAL ERROR (PSEUDO-PERCEPTION)

Nyāya takes a direct realist position about the objects of perception, and a disjunctivist position about the ontological nature of illusion versus veridical perceptual experience. There are no sense-data and what we are aware of perceptually are intersubjective objects with which we interact. To account for illusion, which is a non-veridical cognition that seems to be perceptual (*pratyakṣa-ābhāsa*, "semblance of perception"), Nyāya is faced with the problem of explaining illusion's intentionality without admitting objects other than those with which we are familiar through veridical experience.

Like analytic disjunctivists who deny that illusion and veridical experience are the same type of mental state, Nyāya philosophers hold that an illusion has different intentionality or objecthood, *viṣayatā*, than has a genuine perception. "This is silver" cognized in the presence of tin is veridical in part, concerning the "this," the perceived object in front. The "silver" part of its intentionality is however not a matter of perception, not entirely at least, picking out the universal silver as mediated by memory. Subjectively, it is an overlaying on the presentation of the object at hand. Working through the mind of the (mis)perceiver, the silverhood part of the cognition's intentionality—i.e., the qualifier portion of its objecthood, *viṣayatā*, what it is about—hits the property as had by real pieces of silver. Universals such as silverhood exist only in things, not in a subjective heaven. Thus a veridical cognition, "Here is a piece of silver," and a non-veridical one prompting the same verbalization, "Here is a piece of silver" (when the thing is really tin), do not have the same content or intentionality—they do not belong to the same ontological type (see the chart, p. 29), the one being veritable perception, the other being "appearance of perception," a common form of error (*viparyaya*)—since in the one case the silverhood presented hits the object that figures cognitively as qualificandum (the thing in S's hand is really qualified by silverhood) and in the other the intentionality is split between the thing in front (the tin, the qualificandum) and something other than the thing in front, the silverhood inhering in all silver (connected to the mind of S non-physically, through an "extraordinary relation," more about which to follow), figuring as qualifier. For this reason, the Nyāya theory is called the *anyathā-khyāti* theory of illusion, the "misplacement" theory where something appears "other than what it is."

Now Nyāya does not much consider hallucination (though a lot of attention is paid to dreaming), where even the qualificandum portion of a

cognition fails to hit an object (thus this would not be considered a pseudo-*perception*). However, the logic of the explanation can pretty easily be extended. The material for psychological projection comes from veridical experience as preserved in memory. The unfamiliar is to be explained through the familiar.[19]

Illusion has subjective and objective causes. Phenomenologically tin looks a lot like silver, and the universals, tinhood and silverhood, have some of the same "manifesters," *vyañjaka*, "indicators," such as shininess. That this is an illusion is, moreover, something that is in principle discoverable though it may be entirely convincing at the time. Errors can be found out along with their causes, which are various but also usually attributable to an abnormality in a doxastic process.[20] The processes that are knowledge sources are the standard, 24-carat, the genuine issue which makes the very concept of the semblance possible. Knowledge sources are natural processes working normally, and thus their results fall into natural kinds, or quasi-natural kinds, according to Nyāya theory, as we discussed in Chapter 2. Close imitators, illusions, incorrect inferences, false testimonial comprehensions, and so on, are different kinds of cognition than the veridical, resulting from different processes in which in principle there is a fault or flaw (*doṣa*) with respect to the true *pramāṇa*. Thus the results of *pramāṇa* and of *pramāṇa-ābhāsa*—non-genuine, fake *pramāṇa*—are not the same at all, although a wider uniting kind may be identified higher up in the categorial system (in the classifiers' terms, *anubhavatva*, "being a presentational experience" or "cognition apparently presenting fresh news," but more commonly just *jñānatā*, "being a cognition": it is cognitions, *jñāna*, most generally that are false or true).

This is the short story. The longer story about illusion in Nyāya epistemology takes us first into the context of disputes with Buddhists, both with Nāgārjuna's Mādhyamika school and with Yogācāra, in particular Dignāga (fifth century) and Dharmakīrti (seventh century), and then to Prābhākara Mīmāṃsā. The response to Mādhyamika comes at *NyS* 4.2.34 in the form of a parasitism argument: the very notion of false cognition as in dreams and illusions presupposes that of true cognition. Vātsyāyana makes the argument, and in his commentary on a subsequent sūtra, 4.2.37, brings out the combinational character of illusion, with an object presented (later called the qualificandum) as qualified by a qualifier that it does not have in fact.[21]

Against Dignāga, Dharmakīrti, and followers, the Nyāya response is much more complex. Uddyotakara seems principally occupied with Dignāga throughout his long commentary on Vātsyāyana, and Vācaspati says at the beginning of his prodigious work on Uddyotakara that to counter the arguments of these "bad reasoners" (*ku-tarkika*)—presumably including Dharmakīrti—is what motivates him to write. War is waged on several fronts. Dharmakīrti combines a Buddhist version of pragmatism about concepts and truth with a verificationalist theory of justification.[22]

Relative to a subject's "web of belief," a sensory cognition is said to be illusory when its indications fail to cohere with other bits of information and further sensory data. Ropes don't bite (unlike snakes), and sand (or water in a mirage) does not quench thirst. Dharmakīrti defines a veridical cognition in much the same terms as Vātsyāyana, as a cognition that leads (normally) to successful action. So far so good, from the Nyāya perspective. But the Yogācārins advance a pragmatic theory of concept formation according to which all of our beliefs turn out to be "convenient fictions" (including Buddhist metaphysical positions as helpful for reaching the *summum bonum*). The very same thing that quenches an animal's thirst is a lot more to a human who uses it to cook and bathe, etc., whereas to a demon it's a river of pus.[23] An amorous young man may see a beautiful, nubile young woman, but a hyena sees prey, and a *sannyāsin* (world-renunciant) sees a corpse.[24]

The complaint on the part of Nyāya philosophers against Dharmakīrti in this theatre is circularity, that successful action can only be determined as successful by cognition that is veridical. Also, things to which we are indifferent and towards which we do not act (e.g., pebbles in the road) can still be veridically cognized. Thus the definition is too narrow.[25] Finally, there is the objection that desires can be satisfied even in dreams.[26]

In New Nyāya, the Prābhākara displaces the Buddhist as the principal adversary. The key issue becomes the unity of illusion as a cognition, as it is with recognition. When we cognize "This is silver" given that the thing we have picked up is tin, do we have a single perception-like cognition, or two cognitions, perception providing us with the something that we pick up while simultaneously we remember silver? The Prābhākara argues, as noted, that all cognition is true. The function of cognition is to present the truth. So-called illusion is, then, a failure to cognize, a failure to cognize the difference, e.g., between a perceiving of tin and a remembering of silver. The error lies in acting on this failure, saying, "There is silver," when the thing is tin.

Nyāya of course disagrees.[27] Vācaspati makes the point that the false indication of an illusion does nevertheless inspire action as though there were, e.g., silver in fact. We reach out to pick up silver, no matter that it is tin. No mere remembering would so motivate us to act. This proves that the silverhood qualifier is taken to be perceptual. Of course, the Prābhākara need not disagree: it is the "stealing away" of awareness that the silverhood is the object of a remembering (*smṛti-pramoṣa*) that constitutes the error, a failure to be aware that this is a remembering. Nevertheless, Gaṅgeśa parlays Vācaspati's point into an inference taken to prove the Nyāya theory against the Prābhākara.

> An effort, directed toward mother-of-pearl, generated by a desire for silver, is produced by a cognition of an entity as qualified, a cognition whose object is that of the effort directed toward what is wanted, *since*

> it is an effort, like an effort directed toward mother-of-pearl on the part of someone seeking mother-of-pearl.[28]

All effort directed towards something or other is guided by cognition of the something as qualified by a qualifier, whether the guiding cognition be veridical or non-veridical. This is an inductive generalization. Thus an illusion is a single cognition of something as qualified by a qualifier, and not two simultaneous cognitions.

A last argument comes from apperception, which also shows that the illusion has a qualificandum as qualified by a qualifier as its object, as we shall discuss a little later.

THE GENERALITY PROBLEM REVISITED: TYPES OF SENSORY CONNECTION

The *NyS* definition of perception mentions sense-organ/object connection, which becomes a general condition for certification of perceptual knowledge of all sorts. But there are also specific conditions governing specific ranges of the perceptible in that causal complexes responsible for perception of different kinds of things vary according to sensory modality and in other ways. Nyāya looks at perception causally, and sufficient causality is analyzed in terms of complex bundles of necessary factors. Although the bundles vary, the object or objects indicated in a bit of occurrent perceptual knowledge are deemed not just real objects that are intersubjective, etc., but themselves necessary factors in the perceptual process working through a connection with a sense organ. A bull of a thesis this causal realism, which Nyāya grabs by the horns, trying to wrestle the beast down to the ground wherever it drags and pulls. Although empiricism has often been tied to idealism in the West, Nyāya weds empiricism and realism: the world exists independently of our cognition, and perception is not only the fundamental cognitive link but, in a way, our only link, since all the other knowledge sources crucially depend on perception in their operations but not the reverse.

Just how the world can be known through perception, which parts of it and precisely how, along with the limitations of sensory experience, are part of Nyāya's generality problem. For example, we cannot see atoms, which are known instead by inference from perceptually warranted premises. However, a sensory connection to a pot entails connection to the atoms that make it up. Thus there is a need to explain why the visual organ is incapable of revealing atoms and other very small objects though it is capable with objects that are large and medium-sized. And, as Vātsyāyana mentions, we cannot see many medium-sized things at a distance ("You cannot tell from here whether it is a post or a person"). The science of the sense organs—at least parts of it—is relevant to questions of certification. Knowledge of things through their sound is also conditioned by distance, as well as, in some cases, by a hearer's consciously attending to one sound stream, the voice of her own child, for instance. The theory of the medium of sound, ether (*ākāśa*), including the substance's relation to the audial organ in the ear, is proposed to handle some of these questions, as well as, in the case of vision, a requirement of light (which is not at all well-understood). Attention, which usually works separately from physical factors, is, in many cases of perception, an "auxiliary cause," *sahakārin*, a factor that is in the collection, *sāmagrī*, that is sufficient to bring a bit of knowledge about. As mentioned, Nyāya, like Hume, sets no preconditions about what sort of thing can stand as a causal factor for what other sort of thing as effect (there are mental causes of physical events and physical causes of mental events and purely mental causes of mental events as well as purely physical causes of physical events, for example).[29] Voluntary attention is not in all cases, however, a causal factor, as in the case of a loud sound going off near one's ear blocking out even the near-by voice of one's teacher.[30] It bears repeating that Nyāya philosophers recognize that depending upon the topic—that is to say, according to the type of thing and property perceptually grasped—causal conditions vary.

I think it is for this reason that Nyāya philosophers for the most part confine themselves to trying to articulate the most general and easily recognizable conditions governing perception in general and its most obvious subtypes. They are interested not so much in the mechanics of perception but in certification conditions, marks whereby we can differentiate veritable perception (which generates a true belief) from its semblance (which generates falsehood). I dare say that the total of what they identify as a causal factor for some bit or other of perceptual knowledge is woefully inadequate considering the overall range of the perceptible that they assume with questions of certification—that is to say, by the standards of their own epistemology—to consider all that we purport to know perceptually. However, this is mainly due to the inadequacy of the supporting science, and it is nevertheless important to acknowledge the direction of the Nyāya effort.

At the beginning of his commentary on Vātsyāyana, Uddyotakara spells out six types of sensory connection taken by the later tradition to be uniform causal conditions covering specific types of perception.[31] The theory is filled out by speculation about environmental factors as well as subjective factors, such as the focus and attention already mentioned. The operation of an internal organ, *manas*, is posited in the *NyS* itself to account for perception of emotions, desires, and cognitions (in apperception), as well as for attention, in which case it is directed by the self to shut off informational inlets other than that which is by the self selected. The nature and role of this the "mind" or "mental sense" are hotly debated from Gautama on both within Nyāya and by critics who oppose the posit outright such as Buddhists or offer alternative theories such as Mīmāṃsakas.

Uddyotakara spells out his canonical six sensory connections through appropriating the Vaiśeṣika ontology where there are six, later seven fundamental categories: substance, quality, action, universal, individualizer, inherence, and absence.[32] Within the category of substance, things made of the atomic substances of earth—likewise water, fire, and air—are known differently from the non-atomic substance called "ether," *ākāśa*, which is posited as the medium of sound and known by inference. Moreover, we can smell, taste, touch, see, and hear earthen things and many of their properties, but other things composed of other sorts of substance and other properties are not known through all five senses.

Absences and similarities are important types of relational property known through a causal process crucially involving the mind of the subject. S furnishes the idea of the absentee (S knows "There is no elephant in this room" partly by recalling elephants) and, in the standard analysis of analogy, furnishes one term of a comparison grounded in something currently perceived ("This which is called *gavaya* is similar to a cow"). The absentee part of the cognition's objecthood—the indication that it is elephants that are absent—is furnished by the perceiver's memory. Similarly, memory informs a judgment of cow-similarity in a present *gavaya* buffalo by providing the idea of a cow (or cowhood). In both cases, there is a relational adjunct or "counterpositive," *pratiyogin*, supplied by a (*saṃskāra*) disposition of memory.

The paradigm sensory operation is nevertheless apparently taken from touch, even in the case of the internal organ which somehow "contacts" the self and, for example, its toothache, which is not really in the tooth but in the self or consciousness as delimited by the body. The contact is not physical in this case, it is recognized. It is thought to be physical however in the case of the visual organ, which is thought to extend out of the eye sockets and to connect with the object seen at the object's own location so long as the object is also in contact with light.[33] Visual experience is a property of a self and we should say that there in the self is where it happens, as with pain. But vision does not occur inside the head, and the object is seen where it is, at whatever distance, if indeed it is really seen (visual perception is, like all perception, factive, let us remember). The self is thought to be of infinite size and in the case of a person, which is a self delimited by a living body, it is as though the self's body extends to the thing presented visually. Of course, this is just an image, and mine, please note, not, so far as I know, used by any classical Nyāya philosopher. I use it to bring out Nyāya's assimilation of the idea of the sensory connection operative in vision to that of touch. We may note finally that many of the theories about the operations of the sense organs were held in common across school and show the influence of the medical *śāstra*.[34]

A further classification of sensory connections groups Uddyotakara's six as "ordinary" (physical) as opposed to "extraordinary" (non-physical) sensory connections, which, according to the Nyāya mainstream, come in three types: (a) connection mediated by a universal, as in cognition of an unobserved instance of a universal ("The calf to be born will have a dewlap"); (b) connection mediated by memory, as in cognition of sandalwood in the distance as having a certain smell, recognition of something perceived previously, and perceptual illusion; and (c) connection mediated by yogic power. Jayanta (tenth century) takes the classification for granted.[35] Gaṅgeśa makes it explicit, and though he does not take the grouping as a topic for separate treatment, one type, the connection that works through the universal, is posited by him to explain the possibility of inference—a position disputed by Maṇikaṇṭha (Gaṅgeśa's near predecessor), Raghunātha, and other late Nyāya philosophers, not to mention Buddhists and those belonging to other schools. We shall take this up in the section on pervasion in the next chapter. Acceptance of yogic perception is not uncommon among the classical schools. Of particular importance is *NyS* 4.2.38 and commentaries where the self-knowledge of "yogic trance," *samādhi*, is conceived as a kind of *yaugika-pratyakṣa*.[36] But although an epistemic parallelism with ordinary perception seems universally endorsed by Nyāya philosophers as well as by Praśastapāda, the great Vaiśeṣika,[37] few yogic claims figure as Nyāya tenets. In any case, I have nothing to add here to an exploration of the topic I have done elsewhere.[38] We have already discussed in effect (b), the connection mediated by memory, by taking up the example of visual apprehension of the sourness of a lemon, etc., and illusion.

Much of this area of Nyāya theory may be scientifically quaint, but it is not hard to find its epistemological relevance, considering the Nyāya view of certification. For, identification of causal factors helps us certify knowledge. Nyāya does not require much science to sketch out its epistemological theory, since some signs of the operations of the sources are not hard to discern. Epistemic excellences (*guṇa*) and common flaws (*doṣa*) are both causal factors and signs of knowledge sources, signs that we can readily recognize (thus, e.g., not involving atoms although atoms are also causal factors). Consonantly, pseudo-perceptual cognitions are to be explained as failures to satisfy causal laws.

Thus Nyāya faces up to its generality problem about perception. The special properties that facilitate certification of perceptual knowledge, epistemic excellences and defects (*guṇa* and *doṣa*), are found to vary with modality and object. And so conditions governing the operation of the knowledge source in specific circumstances are delineated. Gaṅgeśa, for example, devotes a whole section of his perception chapter to the precise role of light in the case of visual perception. Expert perception is also recognized, as well as the role of familiarity (*abhyāsa-daśā*), to mention two of the more defensible planks of the Nyāya enterprise.[39]

There is another side to Nyāya's generality problem, concerning negative facts or absences. I know that my glasses are not on the table but how? Dharmakīrti would answer, "By inference," inferential knowledge of an absence being one of three fundamental types identified by the Yogācārin:

"If an elephant were in the room, I (S) would perceive it. I (S) do not perceive an elephant. Therefore, there is no elephant in the room"—similarly for my glasses not being on the table (presuming it is not so cluttered that they could be concealed). Gautama and Vātsyāyana, without elaborating, concur that absences are known inferentially.[40] But Uddyotakara and the later tradition argue that we know absences sometimes perceptually. I cognize immediately my glasses' absence when I look for them on the table. Bhāṭṭa Mīmāṃsā, however, says no, there is operative here a special knowledge source called "non-cognition," or "non-perception," *anupalabdhi*. The main arguments center on the sufficiency of perception, or inference, to make known such negative facts, which intuitively we do know. The Bhāṭṭa argues, for example, that perception makes known only presences, presents positive characteristics, not absences of characteristics. This seems a good phenomenological observation. Indeed, Nyāya has a difficult time assimilating such knowledge to its theory of perception. Its proposal is, to repeat, that an absence has a peculiar structure, relating a locus (the table) to an absentee (my glasses) and that the absentee idea is furnished by the cognizer from memory.[41] One further problem is that not only are there no elephants in the room and no Toyotas but also no demons, *piśāca*, which are not ordinarily perceptible and so could not be remembered.

Thus a generality problem opens for Nyāya both above and below, with resistance to such specific conditions that would make for an additional knowledge source as well as with the admission that subspecies of perception are governed by laws that are not universal for all perceptions. Nyāya philosophers meet the difficulties head-on, however, with effort directed both above and below, filling out large portions of their treatises.

APPERCEPTION

Finally, a few words about the special type of perception called apperception. Literally "after cognition," *anuvyavasāya*, it is defined as a perception taking a preceding cognition or another psychological property as its object, typically a scoping cognition in relation to another scoped. Efforts and desires can be similarly targeted. Through apperception, it is said, one knows infallibly the intentionality or objecthood, *viṣayatā*, of the cognition scoped, in its qualificandum, qualifier, and relational portions, as explained in Chapter 2. One knows, in other words, what the scoped cognition (or effort) purports to be about (or directed to), and one knows this independently of a determination of the target's veridicality. Apperception makes certification possible because it sets up the item to be certified. As discussed in Chapter 2, since the sensory connection in this case is non-physical, not mediated by any of the five material organs of perception, apperception is

generally considered infallible about the contents of the cognition scoped, but not of course about its veridicality.

Something else that can be known apperceptively is the type of cognition the scoped is. Such apperception does not embed a judgment that is always right because Nyāya's typology of cognition crucially distinguishes the veridical and the non-veridical, as noted (see the chart, p. 29). Nevertheless, our apperceptive ability to determine whether the scoped cognition is putatively perceptual, inferential, analogical, testimonial, or of another character has epistemic relevance, since, as with all perception, there would be a presumption in favor of the correctness of an identification. Thus there would also be a restoration of a presumption of truth for a scoped cognition that had been brought into doubt were it judged to be perceptual, inferential, analogical, or testimonial in character, though of course further examination might prove the identification wrong. The upshot of all this is, we may say, the Nyāya thesis that we can identify the origins of our beliefs. By reflection, we can tell where a belief of ours comes from. In some cases, this is all the justification we need, although in others it would be only a first step to further examination or argument.

Note that if further examination were called for, its direction would be determined by the apperceptive identification of type. For, the criteria of genuine perception, inference, and the rest vary according to origin. The characteristic "excellences" and "flaws" (*guṇa* and *doṣa*) are very different for each knowledge source and, as we have seen, there are also significant differences within species of perception in particular. Thus apperceptive judgment of putative type directs inquiry, telling us what to check.

Corollary to Nyāya's thesis of the apperceptibility of cognitive types is its view that illusion can be scoped such that there, too, we find, abstractly, a cognition of an object as qualified by a qualifier, for example, of a piece of tin appearing to be silver. There is also the argument that the fact that we can later see the same thing as really the tin it is shows that the illusion is a single cognition and not, contra the Prābhākara, two cognitions, a perception and a remembering along with a failure to notice their difference. But scoping an illusory cognition is supposed to show this, too, and in a particularly dramatic way when one knows that the cognition is illusory while it continues, such as apparent sight of a double moon or a person with hepatitis seeing a wall she knows is white as yellow. Although apperception is said not in itself to be able to determine the truth of a cognition, in such a case the subject practically sees one thing (the wall) appearing to be something it is not (yellow), *anyathā-khyāti*.

We can attend to bits of our experience. By apperception directed by attention, we can hone in on a single feature of something as presented by a scoped cognition, not restricted to the entire phenomenology of a current moment of consciousness. Anything that we attend to can be named, according to Nyāya. And indeed to attend to anything is to do so by way of a concept whether we know a thing's name or not. The "contents," so to

say, of concept-free perception cannot be attended to, consequently. There can be no apperception of *nirvikalpaka*, which, strictly speaking, does not have intentionality, *viṣayatā*.[42] All that we attend to shows the structure of something (a qualificandum) appearing in some way (*prakāra*, the "way" something appears, i.e., its qualifier). Earlier I said that indeterminate cognition plays no epistemic role, because of—to frame the point now in analytic terms—the "doxastic assumption." Only beliefs can justify beliefs. Only determinate perception of something as some one way rather than another can be either certified or certificational.

Something like indeterminate perception is posited by moderate foundationalists in analytic epistemology as helping to solve the problem of a justification regress, a mental state not embedding an assertion and so immune to questions whether it is true or false. Laurence BonJour: "such a state is, as it were, *semi*-assertive or *semi*-judgmental in character: it has a kind of content or cognitive significance, but not in a way that would raise a further issue of justification."[43] Such a comparison could be misleading, however. Nyāya handles the justification regress differently from the foundationalist who conceives in this way experience as a non-doxastic justifier. Perception, according to Nyāya, is a doxastic justifier. The foundations of our worldly beliefs are doxastic in that determinate perceptions embed propositions that say at a minimum that something is some way or another. Concept-free perception may be thought of as Nyāya's way of rendering of our ability to form perceptual concepts merely from perception's phenomenological side. It is a theoretical posit made to explain how our concepts originate in reality—a problem that is epitomized in cases of a first-time perception of something as an F, the concept F-hood being unavailable to the perceiver. Indeterminate perception plays thus a metaphysical role in the Nyāya theory, and is strictly speaking not part of epistemology. That it cannot be apperceived is a way of making the point.

4 Inference

The Buddhists Dignāga (sixth century) and Dharmakīrti (seventh century) had more impact on the development of the Nyāya theory of inference than, I dare say, the *NyS* itself including the commentary by Vātsyāyana. This is an overstatement, but there is a quantum leap in refinement, and systematization, among Nyāya philosophers beginning with Uddyotakara, who, though he criticizes Dignāga's theory of inference, clearly learned much from his adversary—as did his commentator Vācaspati from Dharmakīrti.

Claus Oetke says about "Ancient Indian Logic," which he takes to include the work of Gautama and Vātsyāyana, that it goes back to three roots: "(1) common-sense inference, (2) establishment of doctrines in the frame of scientific treatises (*śāstra*), and (3) justification of tenets in a debate."[1] Under the "inference sūtra," *NyS* 1.1.5, Vātsyāyana provides examples of everyday reasoning. Several are abductive in character, to use the term popularized by C. S. Peirce, informal reasoning to the best explanation, from sight of a swollen river, for example, to the conclusion that it has rained upstream.[2] But instances of deductive, extrapolative, and sometimes properly inductive reasoning on topics of everyday life as well as of philosophy are given by the two early Nyāya philosophers. Surely it is not true, as is sometimes claimed, that before Dignāga none had the notion of an inference-underpinning "pervasion," *vyāpti*, between a prover property and a property to be proved[3]—a notion that later takes center stage both within Nyāya and outside. However, Uddyotakara feels the constraints of system, let us say, more than his predecessors, and brings out in their thought a theory meant to capture how through inference we have knowledge of unobserved facts. Inference is first of all a natural process—Uddyotakara's is a psychological and causal theory—the imitation of which provides a schema for the undertakings of philosophy and the establishment of tenets in scientific treatises as well as formal debate. Such a synthesis seems to me to provide the proper framework or overview for understanding the voluminous Nyāya literature on inference, particularly the later texts.

There is an almost equally voluminous secondary literature on this area of classical Indian thought—to include of course Buddhist logic, in particular Yogācāra, which was often more innovative and in any case

marched in tandem with Nyāya in developing an epistemology of inference and related theory of inquiry and debate. My own axe to grind here is limited to the matter of overview, and I have not much to add in terms of details.[4] In other words, I shall emphasize the incorporation into epistemology, into *pramāṇa-śāstra*, of the topic of inference, where Oetke's second and third "roots," the textbook arguments in favor of or against various hypotheses and a theory of justification seem to me to become fused in a theory of inference as a knowledge source. Actually, such integration is the view of the *NyS* itself, in chapter 1, as well as of Vātsyāyana. Uddyotakara is less an innovator than a developer of the theory. In any case, it is important to see the Nyāya theory of inference as a part of epistemology, as explaining how we know certain facts through the mediation of our knowledge of other facts. To mention just one advantage, the subordination of logic to epistemology makes it easy to understand why Nyāya counts a valid but unsound argument a fallacy: no knowledge is generated. We have to keep in mind that Nyāya is focused not on logic per se, but rather on a psychological process whereby we come to know facts indirectly, by way of a sign, *liṅga* or *hetu*, an indication of something currently beyond the range of the senses, whether at a distance spatially or temporally or of a sort (such as atoms and God) that by nature cannot be perceived.

Uddyotakara inherits a confused typology of inference, about which he complains (shockingly, given his reverence for his Nyāya predecessors). Inferences based on causal relations—of two kinds, reasoning from effect to cause and from cause to effect—are distinguished from inferences based on relations other than causality—thus three types in all. Sweeping aside the messiness of a mismatch with some of Vātsyāyana's examples, Uddyotakara proceeds to lay out a new typology in which the concept of a "pervasion" relationship, *vyāpti*, between a pervaded and a pervader is central. Pervasion ensures that if the pervaded is present in a locus or inferential subject then the other, the pervader, is also present. This is similar but not the same as inclusion in set theory since pervasion is a relation between properties, not property-bearers. Properties with the same range, with the same bearers, such as knowability and nameability, are nevertheless different. In any case, remembering of examples of co-presence and/or co-absence—or, in a formal demonstration, exemplification (*udāharaṇa*)—is required to know—or show—this inference-underpinning relation between the two terms, the pervaded, that is, the prover property, and the pervader, the probandum property. The pervaded (prover) is a sign of the pervader (probandum).

We shall scrutinize Uddyotakara's three types of inference a little later. First we need to appreciate their commonality: all three concern the warrant or justification for the second line of the following argument pattern that in a simplified interpretation employs the rules of modus ponens and universal instantiation to move from premises to conclusion:[5]

1. H*a* (the subject, *a*, the *pakṣa*, is qualified by H, the *sādhana* or *hetu* "prover" property: "The mountain is smoky" or, more perspicaciously, "The mountain has smokiness"),
2. (x) (Hx → Sx) (where the H property, there the S, the *sādhya* "probandum" property: "Whatever is smoky is fiery"). Therefore,
3. S*a* (the subject, *a*, is qualified by S: "The mountain is fiery").[6]

Deduction-wise, this is pretty much the whole story. However, inference for Nyāya includes more than this single argument form. Specifically it includes the epistemic grounds for the existential and universal premises. To Western sensibilities, it seems as though there is more than one argument here in that whether a premise is justified is taken to be a separate question. However, we should try to appreciate the Nyāya theory on its own terms: the way that a pervasion is known is thought to be included in the single operation of the knowledge source.

There is also the requirement that the inferential terms—subject, prover, and probandum—be "well-known," *prasiddha*, to a subject S if S is to acquire inferential knowledge employing them. Gaṅgeśa draws out the consequence—regarding the Nyāya effort to formulate an inference proving the self as a separate subcategory of substance—that to someone, such as a Buddhist, for whom the property "enselved" is not an item of conception, the inference does not generate knowledge. It works only for those who have certain background knowledge or beliefs. It is inference "for oneself" (*svārtha*) but not "for another" (*parārtha*). This division of inferences is inherited by later Nyāya philosophers from the Buddhists Dignāga and Dharmakīrti and the Vaiśeṣika philosopher, Praśastapāda (sixth century, after Dignāga, before Dharmakīrti). It is important for the distinction of unreflective from certified bits of inferential knowledge.

INFERENCE FOR ONESELF AND INFERENCE FOR ANOTHER (FORMAL DEMONSTRATION)

In his *Nyāya-bindu*, Dharmakīrti distinguishes two varieties of inference to which he devotes separate chapters.[7] The early commentator Dharmottara (late eighth century) claims that inference in general cannot be defined because the difference between the two is fundamental.[8] Dharmottara argues that the former is a matter of cognition (and thus of psychology) whereas the latter is a matter of communication using words.[9] Nyāya philosophers take practically the opposite position, namely, that the inferences we make in everyday life have the same structure as a formal inference for others. Usually this is simply assumed.[10] Clearly, inference for others gets the most attention from the *NyS* on,[11] and it is only in the New Nyāya period that the distinction is at all explicitly drawn. Vātsyāyana indiscriminately

takes his examples from philosophy and everyday life. Those presented in the fifth book of the *NyS*, which is devoted to fallacies and fallacious objections in a debate context ("Sound is not eternal, *since* it is a product, like a pot" and so on), are formally conceived. Nevertheless, it is easy to see from the examples adduced that Nyāya philosophers think we make inferences all the time, particularly concerning something to be accomplished, as revealed in our efforts (which are defined as cognitively guided). That I can make some smoke now by making a fire is something I know by inference, as well as that my interlocutors take the word 'fire' to mean fire and so on through innumerable bits of general knowledge informing speech and other acts.

The early Buddhist theory is superior to Nyāya's in many respects, including its talk of the selective power of desire to present candidate concomitances.[12] These would appear to be acceptable until disproved (by counterexample) as bases for extrapolation, given the requirements set forth by Dignāga (see the beginning of the next section) according to which there need be only a single known instance of co-presence of the prover and probandum properties so long as there is no known instance of the prover without the probandum. New Nyāya authors pick up the selection theme in discussing the requirements for something to be a veritable inferential subject, *pakṣa*, the subject property-bearer about which we would like to know whether it possesses the probandum property.[13]

From the earliest it is said that a proper demonstration should have five members (Vātsyāyana considers and rejects a ten-part form). Note these are not steps in a proof.

1. That mountain is fiery. (The "proposition to be proved," *pratijñā*, that is, that the *pakṣa*, the inferential subject, is qualified by the *sādhya*, the probandum.)
2. That mountain is smoky. (The "reason," *hetu*: the inferential subject is qualified by the prover, *sādhana*. This premise is taken in the stock example to be a bit of perceptual knowledge, but it could be testimonial or even inferential instead.)
3. Whatever is smoky is fiery. (Or, "Wherever smoke, there fire." The *udāharaṇa*, the "exemplification" or statement of the general rule, *vyāpti*, "pervasion": where the prover, there the probandum. The prover is "pervaded by" the probandum. This premise is generally—though not by Maṇikaṇṭha—taken to be warranted by wide experience, *bhūyo-darśana*, of positive correlations and/or negative, such as in a kitchen hearth, *dṛṣṭānta*, the example.)
4. That smoky mountain falls under the "whatever" of the general rule, "Whatever . . . " (The *upanaya*, "application": The mountain, or *pakṣa*, falls within the scope of the universal quantifier, the *vyāpti*.)
5. That mountain is fiery. (The *nigamana*, "conclusion": same as step one, except now proved.)[14]

The five steps are to be construed as a single statement governed by grammatical and semantic rules, designed to provoke inferential knowledge in another. The idea—from Gautama through Navya Nyāya—is that the five-membered form is an ideal ordering corresponding to requirements of syntactic binding and semantic "fittingness" (*ākāṅkṣā* and *yogyatā*)—crucial to testimonial knowledge (see Chapter 6)—for provoking inferential knowledge from a statement that provides the inferential terms in the proper relationship.[15]

Natural, unreflective inferences are sometimes cited to illustrate a subject's comprehension of the information in one or another of the five "members," *avayava*. But a demonstration as meant for others does not precisely mirror the psychological process of unreflective inference for oneself. Nevertheless, both types of inference have to meet the following three conditions, according to Uddyotakara and everyone afterwards.[16] Let me repeat the main point: the two kinds of inference are thought of in Nyāya as essentially the same in principle. There is an epistemic difference—which is sometimes crucial, determining whether although one oneself knows that p the other knows that p, too—concerning the availability of the probandum term in an inference for others. We shall talk more about this the cash value of the distinction later (in the last section of the chapter). First let us appreciate the three conditions, which serve as certification conditions and must be met in fact by both kinds (though it is only at the reflective level that they are identified). In parentheses I present the usual explanation targeting an inference for oneself, but it is easy to see how it would go with a demonstration.

(1) *pakṣa-dharmatā* (The prover has to be known as qualifying the inferential subject or site.)
(2) *vyāpti-smaraṇa* (The prover as pervaded by the probandum has to be remembered.)
(3) *liṅga-parāmarśa* (The subject must connect by reflection the pervasion with the subject at hand.)

Now proper reconstruction of the full inferential process that these conditions address would have, at a minimum, each of three lines (two premises and the conclusion) prefixed by the epistemic operator '(K)', to be read, "A subject S knows that. . . . " To use again a simple representation of pervasion (not sensitive to the precise logic of occurrence/non-occurrence at a location):

1. (K) Ha
2. (K) $(x)\ (Hx \rightarrow Sx)$
3. (K) Sa, provided that *parāmarśa* has occurred.

I tack the third condition on at the end, since it is no separate operation. "Inferential reflection," *parāmarśa*, is a matter of putting the information

together from the two premises such that, psychologically speaking, the inferential conclusion becomes the content of a bit of occurrent knowledge. The nature of this "reflection" is a hot topic, both within Nyāya and without. Uddyotakara makes it the central pillar of his theory, and Gaṅgeśa devotes a long section of his inference chapter to arguing that it is required (contra Mīmāṃsakas in particular). The upshot is, it seems to me, that knowledge is not closed under deduction considered in abstraction from the psychological process of "reflection," *parāmarśa*. But through that process, epistemic warrant—or "certainty" (*niścayatā*)—passes from premises to conclusion, and we act unhesitatingly, for example, to put a fire on yonder mountain out.

Things are yet more complicated. Inferential knowledge is defeasible, or, more precisely stated, what a subject takes to be inferential knowledge may turn out to be pseudo, non-genuine, a false cognition imitating a true one, or even in Gettier-style cases an accidentally true cognition masquerading as one genuinely inference-born. As mentioned in Chapter 1, knowledge has a social dimension. Not only would awareness of a counterexample be a defeater, but also if someone were to present a counterinference to a conclusion opposed to ours, no longer would we have inferential knowledge. Awareness of any of several kinds of "blocker" of "reflection" can undermine the generalization on which such reflection depends. There are potential preventers of inferential awareness, "defeaters," *bādhaka*, leading to belief relinquishment by someone who has hitherto not noticed a counterexample or the like and who has thus drawn a conclusion erroneously.[17]

Nyāya has an answer to the Cārvāka skepticism that no amount of "wide experience" could secure knowledge of pervasion since that would include all things smoky and fiery, for example, past, present, and future.[18] The answer comes in the form of the suppositional reasoning that, for example, if yonder smoky mountain were not fiery, something's being smoky would be a mere accident. Is this alternative plausible? No. Admittedly, there is something right about the complaint, which is that we are fallible in our generalizations. But that does not mean that we do not know inference-underpinning pervasions when we do. What it means is that we have to have an eye out for counterexamples. As the Advaitin Śrīharṣa (eleventh century) points out, everything earthen that we have encountered, say more than a thousand specimens, may have been scratchable by iron. But when we encounter for the first time a diamond, which is not scratchable by iron, we relinquish our belief in the concomitance and no longer is earthenness a sign for us of iron-scatchability.[19] The second part of the Nyāya response is that our action shows that sometimes we do know pervasions. We act unhesitatingly showing our confidence in inferential knowledge.

FROM EXTRAPOLATION TO GENERALIZATION

Jonardon Ganeri argues that an extrapolative pattern including causal reasoning as well as sampling (presuming uniformity in nature) is present in

some of Vātsyāyana's examples as well as in cases taken from early Buddhist literature and, indeed, the formalization of the marks of a "(good) reason" by Dignāga.[20] To take up a Buddhist example, from a drop of ocean water tasting salty a subject extrapolates to the saltiness of any other bit of ocean water. The reasoning is from particulars to particulars that are relevantly alike. The dark cloud overhead—in one of Vātsyāyana's examples of knowledge by inference—is relevantly similar to the one seen yesterday that brought rain but not relevantly similar to the white cloud seen the day before that was rainless. So it is concluded that it will rain.[21]

Dignāga, who as a nominalist would want inference to work from knowledge of particulars to other knowledge of particulars, formulates a threefold test for a good prover, *trairūpya-hetu*, which should be compared to Uddyotakara's three certification conditions (see p. 55):

(i) that the prover's occurrence in the site or subject of a proposed inference be known to a subject S (the same as Uddyotakara's *pakṣa-dharmatā*, condition 1)
(ii) that the prover's occurrence at least once together with the probandum be known to S (a version of Uddyotakara's *vyāpti-jñāna*, condition 2)
(iii) that no counter-case of a prover occurring without the probandum be known to S (also corresponding to Uddyotakara's condition 2).

Ganeri claims that it is better to understand both the Buddhist and Nyāya theories as "not enthymematic," not skipping a step of generalization and then implicitly using universal instantiation in applying the rule to the case at hand. Case-based reasoning need not be interpreted as relying on universal quantifiers, and the representation of Schayer and others which uses them is misleading.[22] Theirs is indeed misleading, and Ganeri appears to be right with regard to the Yogācāra theory. But with late Nyāya Schayer's argument form of UI and MP misleads not for this reason but rather because it fails to be sufficiently sensitive to the logic of occurrence and non-occurrence of properties at a location, or qualifying a property-bearer, as Ganeri among others has brought out.[23] Furthermore, Ganeri is right that in analyzing the pattern one tends to miss the unity of the causal theory that has one mental state caused by another. To be sure, the unity of the Nyāya view must be appreciated, everything integrated in the notion of "reflection," *parāmarśa*, as an inference's "proximate instrumental cause" or "trigger," *karaṇa*. While not the only necessary condition, this is the last one in place, securing the occurrence of inferential knowledge (*anumiti*).

Following Matilal, I have framed Gaṅgeśa's understanding of such "reflection" as a singular inference.[24] Thus:

$$(K)(S^{p}Ha) \rightarrow (K)Sa$$

This says that on the condition that a subject knows that H-as-qualified-by-being-pervaded-by-S qualifies *a*, then the subject knows that S*a*.[25] The

arrow should be interpreted as depicting causal sufficiency, following Uddyotakara and the later tradition. "Reflection" is a complex mental state that is nevertheless a unity, both as a particular cognition that would be the decisive factor for the rise of another cognition and as having content, or "objecthood," expressible in a single sentence. Ganeri's attempt to find a single rule is in consonance with both of these dimensions of the Nyāya theory. But at least in the paradigm case a lot of inductive depth is packed into the idea of a pervasion being known, and a lot about it is said that shows that there is generalization according to the Nyāya understanding of inference as a knowledge source. Maṇikaṇṭha Miśra (thirteenth century) and other New Naiyāyikas help us to see that grasping the *vyāpti* relationship that underpins inference can be other than through collecting instances, being sometimes immediate, sometimes aided only by suppositional reasoning, *tarka*, as the case may be, that is to say, according to the nature of the pervader and pervading characteristics.[26] Nevertheless, inductive generalization stands out as the gold standard for grasping a pervasion relation permitting inference.

So in the paradigm case, a person P who has inferential knowledge has discerned a pervasion relationship from a finite set of correlations by P known (from perception or testimony or even another inference): H*b* and S*b*, H*c* and S*c*, H*d* and S*d*, . . . (H = prover and S = probandum). P has in addition to these positive correlations no knowledge of a counterexample (something H but not S), though, let us say for simplicity's sake, P does know of some things that are S but not H (being-an-H and being-an-S are not co-extensive). Furthermore P has the following negative evidence in a standard case: ~S*e* and ~H*e*, ~S*f* and ~H*f*, ~Sg and ~Hg,. . . . On the basis of all this, P has generalized, being-an-H is pervaded by being-an-S, and stores the knowledge in memory. P then comes to know by perception (or by testimony, etc.) that something is, well, not simply an H (H*a*) but an H-qualified-by-S-pervasion, through the projective power of memory, all of which we shall abbreviate as 'H*'. H**a* is not a *prima facie* but a *conclusive* reason to believe S*a*. Psychologically considered, the reflection that draws from this information the conclusion S*a* is the penultimate cognitive occurrence before *anumiti*, before the inferential knowledge occurs.

This new knowledge is certain but defeasible and uncertified, at least not yet, as has been explained.[27] The defeasible character of reasoning means that we have to see the "prover" not as an example we arrive at by extrapolation, but as H**a*, as *a*'s being H as known to be correlated with S through inductive evidence (as noted earlier). Thus we could be wrong, and as philosophers we know it such that we are sensitive not only to counterexamples but to the whiff of counterexamples, known in the literature as the *upādhi*. An *upādhi* (U) is defined as a property meeting two conditions:

(1) U pervades the probandum S: (x) (Sx → Ux).
(2) U fails to pervade the prover H: (∃x) (H*x* · ~U*x*).

The consequence of something's being an S while there is known to be something H that is not a U is that an original inference in terms of H and S is defeated. An *upādhi* condition entails that there is a counterexample. Now while the epistemological consequences of a known counterexample may be obvious, it is not so obvious what Gaṅgeśa claims, to wit, that even a dubious *upādhi* undercuts, i.e., blocks and defeats, inference.[28]

For example, if P had knowledge of the correlations, S*h* and U*h*, S*i* and U*i*, S*j* and U*j*, . . . along with no knowledge of a counterexample (something S but not U), and, let us say, P does know of some things that they are U but not S (being-a-U and being-an-S are not co-extensive, though, Gaṅgeśa explicitly states, they could be co-extensive and there be an *upādhi* nonetheless). We may also imagine that P has negative evidence correlating, with no counterexamples, things ~S and ~U. On the basis of all this, P generalizes: being-an-S is pervaded by being-a-U: (x) (Sx → Ux). Furthermore, if P knows, or simply has the suspicion, Gaṅgeśa maintains, that something is an H but not a U—(∃x) (H*x* · ~U*x*)—then P's awareness of these two conditions together—the U's pervading the S along with the U's not pervading the H—would block and defeat P's warrant for the otherwise inferentially based belief (S*a*). This shows not only that inductive evidence is taken by Nyāya to be intrinsic to inference as a knowledge source, but also that Nyāya philosophers recognize the epistemic relevance of undercutting possibilities. To know a pervasion as required for inference one has to know that the relationship between the prover and the probandum is *upādhi*-free, according to many Nyāya authors.[29]

One of Gaṅgeśa's examples of a dubious *upādhi* that undercuts an inference nonetheless is digestion-of-certain-vegetables, an *upādhi* for an attempt to infer that Mitrā's next child will be dark-complexioned on the grounds that her other children are dark-complexioned. The inference-permitting pervasion has to be known, and if doubt is legitimately cast on that relationship, inferential knowledge is blocked. A dubious *upādhi* is counted an inference-blocker, and this *despite* the pervasion relationship required of the *upādhi* itself not being certain or the *upādhi*'s failing to pervade the prover not being certain or both (see the definition of an *upādhi* given earlier).

With regard to the Mitrā example, we do not know what Mitrā has eaten during her current pregnancy. She may or may not have eaten the vegetables, and they may or not be responsible for the dark complexion of her children. Furthermore, it could turn out that not only has she always eaten the vegetables but will always do so such that the *upādhi* would not fail to pervade the prover. Even her future children would be born to a mother who has eaten the vegetables such that the prover, being-a-child-of-Mitrā's, could predict the probandum, being-dark-complexioned, not for a genetic reason but rather because of the vegetable habit, while the existential condition for a genuine *upādhi* would not be met. This, then, is a reason why the *upādhi* is dubious. It still undercuts. There is a good chance that although

Mitrā has eaten the vegetables in the past she has not this time, such that the *upādhi*'s failing to pervade the prover is a real possibility.

Similar remarks are to be made about the requirement of the *upādhi*'s pervading the probandum. So long as there is evidence for this, the *upādhi* defeats the putative inference. The pervasion could be nevertheless dubious for one or both of two reasons: (i) we do not know whether Mitrā has eaten the vegetables during each of her previous pregnancies (though there is a good possibility that she has) and/or (ii) there is a richer complex of conditions, such as Maitra being the father, such that if they were known the *upādhi*'s pervading the probandum would be a discarded thesis. And there is a good chance that there is such pervasion: Mitrā has in fact eaten the vegetables during all her previous pregnancies (though not this time), and even if that is a necessary condition for her children's being dark-complexioned only under the further condition of Maitra being the father, or is not a necessary condition at all, the worry about the vegetable diet (backed up by medical authority, which Gaṅgeśa also mentions while regarding it as in itself not at all conclusive) is sufficient to block the original inference. We do not know, therefore, that her child will be, like her other children, dark-complexioned.

The standards of warrant are thus lower for knowledge of the pervasion required for an *upādhi* than with knowledge of the pervasion required for an original inference in focus. And this seems correct, since the point of inference is to pass on warrant from premises to conclusion by way of a pervasion cognized with a degree of justification that does not diminish a person's overall level of confidence and would normally lead to unhesitating effort to act.

Pace Ganeri, knowing a general rule is considered crucial, not just extrapolation to a next case. From Uddyotakara on, Nyāya philosophers treat pervasion as the equivalent of a rule stating that—to use the language of sets and terms—the extension of the probandum term includes that of the prover term, includes it entirely such that there is nothing that locates the pervaded property (the prover) that does not also locate the pervader (the probandum).[30] Any new H has then to be an S, because of the rule or inclusion. One could argue that the centralmost issue and the main line of effort of the New Nyāya philosophers is to make plain the logic of pervasion as well as how we know the universalized items, or entire extensions, of the terms figuring in our knowledge of such rules, the items that underpin our knowledge of such inclusions, such naturally necessary pervasions of a prover by a probandum property. Here again they learn much from their Buddhist adversaries, although again they hardly follow them.

THE ONTOLOGY OF PERVASION

New Nyāya philosophers work with an ontology inherited as much from Vaiśeṣika sources as from Nyāya. Fellow realist Mīmāṃsakas present

variations and a somewhat richer scheme of ontological categories than the Vaiśeṣikas. Buddhists reject this work almost in its entirety, and some Vedāntins see it as representing only the structure of appearance, *māyā*, the cosmic illusion, real so far as our everyday concerns go and normal consciousness, not real in a higher or religious sense. Nyāya philosophers themselves often express skepticism about one or another of the items on the Vaiśeṣika list and to various inherited ontological principles. As mentioned, the New Nyāya philosopher Raghunātha proposes radical changes. Nevertheless, the Vaiśeṣika ontology of substances, qualities, motions, universals, individualizers, inherence (the ontic glue of the system), and absence is utilized in various contexts including the ontology of pervasion. New Nyāya philosophers crystallize a simplification they find in their predecessors' writings on word meaning (an individual as qualified by a universal) and the *anyathā-khyāti*, "misplacement" theory of illusion in particular.[31]

Cognitions have a certain structure determined by what they are about, their "objecthood," *viṣayatā*, namely, in the simplest form, a qualificandum (*a*) cognized as qualified by a qualifier (F): F*a*. Qualificanda are the subjects of inferences, the sites whose possession of a probandum/qualifier inferences make known, albeit sites are known by way of a qualifying property, e.g., mountainhood, with the stock example of inference to fire on yonder mountain. The property that specifies the subject is epistemically relevant in certain contexts (e.g., we know that lakes are never fiery no matter that we see what looks like smoke but is really morning mist). But this is irrelevant to the present point which is that the traditional scheme of categories is subsumed into a threefold division of properties (qualifiers), property-bearers (qualificanda), and qualificative relations (usually simply occurrence, property-possession, or qualification). Typically a qualificandum and site of an inference will be a substance such as the mountain of the stock example, which is a material thing composed of earthen atoms. Typically, a quality, such as blue, a motion, or a universal (such as smokiness or fieriness) would fill each qualifier spot (prover and probandum), the prover property/qualifier corresponding to a perceptual adjective or predicate in an observation statement. But particulars can be qualifiers, as when the floor has a pot on it (and we say, perspicaciously, "The floor is qualified by a pot," which would be by the relation of contact or conjunction, *saṃyoga*). And a universal or another abstract character can stand in the qualificandum place, as happens in particular in abstruse philosophical arguments.[32] So the new ontology may be said to nudge the other out, at least in the context of the epistemology of inference, although the former informs it at crucial places, as we shall see.

Probably the most important innovation taken over from Vaiśeṣika is the concept of absence, *abhāva*.[33] All properties either occur or do not occur at a specified site, either qualify or fail to qualify a particular property-bearer. An absence of a property F is another property, F-absence (~F). There is the following rule capturing part of the logic or general nature of an absence:

For any qualificandum x, if (a property) F does not qualify x, then ~F does qualify x (~Fa).

Non-locatable properties are fictions, composites constructed by the mind out of concepts created by veridical presentational experience. There are no absences of fictions. There is no absence of a rabbit's horn on the table, although there is an absence of horns on a rabbit. "Absence of a rabbit's horn" is ill-conceived, not really a property, the notion standing in tension with a second rule about absences. This is that the absentee, the *pratiyogin*, "countercorrelate," be a locatable property. "Rabbit-horned" does not occur. An inference cannot trade on an absence whose countercorrelate does not occur.

In contrast with this narrowing of the scope of inference by an ontological consideration, another expands it. Universal properties, such as knowability, qualify every qualificandum in the universe. Thus the negation of one of these is non-locatable and thus not a true property. We may infer knowability nevertheless, although in principle there can be no negative correlations through which to know the pervasion.[34]

With these ideas in mind, let us turn now to Uddyotakara's three types of inference, which are divided according to how a pervasion is known (*vyāpti-graha*). Note that from Uddyotakara on, this issue is separated out for special attention and analyzed prolifically. Suppositional reason (*tarka*) is enlisted to the cause. But let us stay focused on the inductive method.

Of the three certification conditions, we are concerned with the second, *vyāpti-smaraṇa*, "memory of pervasion." There are three ways a pervasion can be known and thus remembered, depending on positive and/or negative correlations:

(i) inferences based on positive and negative correlations (*anvaya-vyatireka*), where both are available, i.e., cases where, for example, smokiness and fieriness have been known to occur together, kitchen hearths, campfires, etc., like (it is claimed) yonder smoky mountain where being-fiery is to be inferred, taken along with negative examples where the prover as well as the probandum is known not to occur
(ii) inferences based on positive correlations only (*kevala-anvaya*), where there are no known examples of an absence of the probandum property, such as would have to be the case with the universally present property, knowability (there is nothing that is not knowable)
(iii) inferences based on negative correlations only (*kevala-vyatireka*) where outside of the subject or site there are no known cases of the probandum.

As a naturally occurring relation, a pervasion is the same thing no matter which of these ways it is known. Even negatively formulated as a pervasion of the absence-of-the-probandum by the absence-of-the-prover, it is the same fact.[35]

Knowledge of pervasion through inductive generalization is such that normally examining the *vipakṣa* (where S is known not to occur) would be relevant: all cases of not-S have to be also not-H. However, with a universally present property such as knowability, there is no *vipakṣa*. And so an inference to something's knowability cannot in principle be supported by negative correlations. It would be "positive only," and "positive only" in principle.

A slightly different story has to be told with the "negative-only," which on the face of it seems invalid. Buddhists do not recognize this third type or categorize what Nyāya philosophers see as its instances as inferences based upon knowledge of a partial or entire co-referentiality of prover and probandum terms (which comes to be called "internal pervasion," *antar-vyāpti*). Furthermore, Mīmāṃsakas postulate here a distinct source of knowledge called *arthāpatti*, sometimes translated "circumstantial implication." In any case, the logic hinges on the notion of a genuine *pakṣa*, inferential "site" or "subject," and what can be legitimately assumed in an inferential context. This is the argument form for several of Nyāya's philosophical inferences, and I propose to expand on this third type in the next section in looking closely at an inference for the existence of self, *ātman*. First, let us tie up a couple of loose ends concerning the ontology of pervasion.

Knowing a pervasion entails knowing that a future H-bearer will also be an S-bearer. Udayana proposes—followed in this by Gaṅgeśa and other but not all New Nyāya philosophers—that some universals are known perceptually. They dwell timelessly and holistically in their instances (cowhood pervades every part of a living cow), past, present, and future. Thus perception of, e.g., cowhood in Bessie entails a kind of sensory connection with cows still to be born. The connection is "extraordinary," one of three kinds of extraordinary connection as opposed to the ordinary six, (question-beggingly) termed *sāmānya-lakṣaṇā-pratyāsatti*, "relationship that works through a universal." This is a type of perception that is very helpful for inference, providing generalized properties at the perceptual level.

We could say: Well, there is then no role for inductive generalization. Yes, there is. There is always the possibility we are faced not with a genuine universal but rather a mind-constructed accident (the metaphysical *upādhi*), contoured in an irrelevant way, and so inductive evidence is often relevant. Induction is the way many universals are certified as genuine although we grasp the entirety of cowhood in a sense from a single perception of Bessie. Furthermore, some universals are hidden and known only by indicators, "manifesters," *vyañjaka*, and inference. They are not directly perceived, for example, atomhood. Still, proper inductive procedure is a certification condition in practically all cases, since universals have temporal spread. Nevertheless, when we perceive one embedded in a locus we get in a sense the entire thing. Future cows do not change the nature of cowhood. To be sure, pervasions relate thick particulars, not bare qualificanda, individuals as qualified by universals (and other characters that are universal-like, "quasi-universals," in particular the *akhaṇḍa-upādhi*, the unanalyzable accident,

e.g., being-a-quality, as opposed to the analyzable, being-Devadatta's-cow[36]). But this is because universals, etc., inhere in their loci, and do not exist in the mind. Knowledge of a pervasion does include all instances in their being instances of the universals it trades on.

Thus on Udayana's view of perceptible universals there is an answer to the question of how sometimes we know a pervasion in its full generality—everything H as an S. It is that some veritable universals are perceptible characteristics, cowhood, for example, in a cow. Not all universals are hidden. Just as we can know Devadatta, who is standing in the door perceptually without perceiving his whole body—and all the characteristics that make him up as a person, as a "thick particular," a qualificandum together with its qualifiers—so we can know the universal cowhood in Bessie without perceiving all cows.

Naturally the classical Indian controversy over universals does not end (nor begin) with this theory, which we shall now table to take up one last broad area of classical discussion of the ontology of pervasion, causality in a word. Here let us again go back to the Buddhists and still another typology of inference. Dharmakīrti divides inferences into three types based on different types of pervasion in nature:

(1) *sva-bhāva* (self-nature: "It is a tree because it is a *śiṃśapā*")
(2) *tad-utpatti* (causality: "Fire is there because smoke is there")
(3) *anupalabdhi* (non-perception: "There is no pot here because none is perceived here").

Nyāya eliminates two of the three as otherwise explainable. The first, a kind of *a priori* knowledge, it would seem, is not counted as inferential by Nyāya philosophers who dismiss it as mere memory of the meaning of words or phrases. Or, in certain instances, inferences can be reformulated as "negative-only" (see note 41 to this chapter for a stock example taken from Buddhist literature). Knowledge of synonymy, whether in whole or in part, is not really *pramā*, "knowledge" of the sort we have been discussing, since it is not "presentational experience," *anubhava*, not cognition presenting fresh news, but rather memory. Or, we should say that since testimony is the main way we learn the meaning of words (though there are others, for example, analogy), knowledge of synonymy would typically be a form of testimonial knowledge. It may well be a shortcoming, but the truth is that the Nyāya school does not much interest itself in the *a priori* which is in this way redlined (a lack we'll revisit in Chapter 7). Dharmakīrti's third kind of inference, absential knowledge, Nyāya views as a kind of perceptual knowledge, as we discussed. That leaves causality. And Nyāya philosophers do try to interpret the pervasions on which inferences hinge as causal relations, generally speaking. They often flounder, it seems to me, in the attempt, but it is important to recognize that in this way they see pervasions as naturally necessitated. Without the pervader, the pervaded could not have come to be.

There are three main types of causal relationship, the instrumental (and any non-eternal object or event will typically have several instrumental causes, the most important of which is the "trigger," *karaṇa*), the inherent, and the emergent.[37] Often we find tedious effort using these notions to integrate the power of inference and the nature of the facts inferred. But with one further remark tying our two loose ends together, universals and causality, let us move on to look at some important philosophical inferences. Universals are relevant to determining causal laws. It is not a match as a substance—though a match is indeed a substance—that is a cause of fire but rather as a wooden stick with a tip of phosphorus.[38] Nyāya philosophers tend to think of natural laws in terms of relations among universals (and quasi-universals). But again let us put aside the metaphysical issue to see what we can learn from some famous Nyāya proofs.[39]

PHILOSOPHICAL PROOFS OF SELF, GOD, AND *MUKTI*, "LIBERATION"

Presentation of arguments that meet the requirements of the theory of inference as a knowledge source are not the only way to establish, or at least to defend, positions in philosophy as in everyday life. There is also *tarka*, suppositional reasoning, which we reviewed in Chapter 2. Nevertheless, there are some important arguments that proceed according to the standard inferential form. Let us look first at an inference to self that proceeds by "negative correlations only," *kevala-vyatireka*.[40]

As mentioned, negative-only inference was highly controversial among the classical schools. Two co-extensional terms present an epistemological puzzle when the one is used to pick out the inferential subject (*pakṣa*, for example, "being earthen," or, in a second example, "every living body") and the other the prover (*hetu*, "having smell" or "has breath"). The inferential subject cannot itself be used as inductive support for the required knowledge of pervasion ("Whatever has smell is a distinct substance" or "Whatever has breath is enselved"), since otherwise inference would be pointless. A putative prover's extensional equivalence to the subject (and indeed everything that is earthen is thought to have smell and only those things that are earthen; similarly with the other inference) would mean that there could be no positive support, no correlations of a positive variety of the S (*sādhya*, "being a distinct substance"; "being enselved") and the H. So an inference based on a pervasion under these circumstances would have to be "negative-only."[41]

However, the form seems invalid without restriction, since it would prove too much. Given merely that *a* is H, with no known H outside the *pakṣa* (*a* as specified by a property such as mountainhood), it would appear from the correlation of ~S and ~H that we could prove of *a* any property

known not to reside outside the *pakṣa*. For example, "Martian-made" (S) could be proved of every cow (*a*) by the prover cowhood (H). Everywhere we find something that is not a cow, there we find something that is not Martian-made, e.g., a rock. Thus, since Bessie has cowhood, Bessie is Martian-made.[42] It is important historically that my example would be ruled a non-genuine inference through its having an "unfamiliar" probandum (*aprasiddha*). And it would also fall to the counterinference, *sat-pratipakṣa*, "Every cow is non-Martian-made, *since* it is a cow, unlike a rock." The problem of the form's being too powerful is apparent nonetheless.

Furthermore, negative correlations would seem to be not strictly relevant, at least in some cases, as is brought out by the "ravens paradox" well-known to students of inductive logic.[43] An evidence base supporting the generalization, "All ravens are black," benefits from the sight of an additional black raven. But to flip the pages of a book, noting that one after another is neither a raven nor black, seems irrelevant. In Nyāya terms, a pervasion of being-black (H) by being-a-raven (S) should require positive evidence. Negative correlations, being practically everywhere, shouldn't count. Nyāya philosophers would see the pervasion of being-a-raven by being-black as known by both the positive and negative methods, but again the problem is plain.

On the other hand, if the absence of the probandum (~S) is grasped as having the same or an inclusive extension with the absence of the prover (~H), the presence of the prover (H), which is an absence of the absence of itself (~~H), proves the absence of the absence of the probandum (~~S), which is the probandum itself (S). This seems to be how Gaṅgeśa and his followers understand the logic of the "negative-only" inference. He points to the logical rule of transposition—$(p \rightarrow q) \equiv (\sim q \rightarrow \sim p)$—as underpinned by the ontology of pervasion such that the negative-only makes the same type of thing known as is known by positive correlations.[44] A pervasion made manifest negatively is equivalent to one made manifest positively.

In other words, all things H being things S may be evident only from the ramification that everything that is not an S is not an H. Positive correlations may be hidden or in principle not exist. A double absence is equivalent to a positive presence, that is, with respect to two "mutual absences" or "distinctnesses" (*a*'s distinctness from being-distinct-from-*a* is equivalent to *a*'s identity). The fundamental truths of things (*tattva*), which are captured by philosophical definitions, seem accessible only through knowledge of fundamental distinctions. A defining characteristic of earth, for instance, is having-smell, which can be used as the prover for a negative-only inference to earth's being a distinct substance, where the *pakṣa* is everything earthen (thus all things earthen are bracketed in the context of the inference): wherever the non-earthen, there the not-having-smell.

To firm up our grasp on the form and to appreciate a subtle point of epistemology, let us focus now on a famous Nyāya inference to "self," *ātman*, as the locus of, in some versions, having-breath, and, in others, desire, cognition, and other psychological properties, thence inferred to be a fundamental subcategory of substance. A simple version:

a (*pakṣa*) every living body
S (*sādhya*) has a self
H (*sādhana*) has breath

Thus, "Every living body has a self, *since* every living body has breath, unlike a pot (a pot being qualified by both absence-of-self and absence-of-breath)." The inferential subject includes all living bodies, and so there is no *sapakṣa*, no examples of the probandum known outside the set of things that are living bodies. Thus, the inference has to be *kevala-vyatirekin*, based solely on correlations of absences, "unlike a pot," a pot having neither breath nor a self.

Gaṅgeśa wrestles with the problem of how the probandum "has-a-self" is known, known at least well enough to be available for inference. And he concedes that his carefully reworked inference will not go through for everyone, not for someone who does not understand the property to be proved, for example, the Buddhist.

To find such an epistemic consequence makes Gaṅgeśa's attitude appear to be different from that of his teachers who do try to prove the existence of the self against the Buddhist stream theorist. Buddhist philosophers reject Nyāya's whole approach to ontology as a matter of property-bearers enduring through at least some types of property change, pointing to various conundra or paradoxes concerning relations (such as the so-called Bradley problem).[45] For the Buddhist opponent, "self" is a "convenient fiction," bundling momentary *dharma* or properties that have no property-bearers but are causally ordered in sequences. Gaṅgeśa holds that his Nyāya inference to self is *bona fide* only as *svārtha*, "inference for oneself," not *parārtha*, "inference for others," not universally at least, having no force against the Buddhist for whom the probandum does not make sense. Thus the engine of the negative-only is restricted by Gaṅgeśa to non-controversial predicates, or those for which lots of work has been done in other patches of the system. As you can see with the following quotation, much in the Nyāya system is presupposed.

Here is the final version of the argument that Gaṅgeśa defends, which is really two inferences, the second, negative-only:

> With it established that desire resides in a substance, that substance—in the absence of a locus for it in earth and the rest (of the eight)—is distinct from the eight substances (on the list) beginning with earth, *since* it possesses a property that does not occur in the eight or *since* there are counterconsiderations ("defeaters," *bādhaka*) that rule out earth and the rest (of the eight)—thus is there established a substance over and above the eight. Given that establishment, there is proved—with

respect to desire (as inferential subject)—a having of (i.e., a resting in) a substance that is over and above the eight, or, an occurring in a substance that is over and above the eight. Either probandum (such a having or such an occurring) is "well-known" (*prasiddha*) in the case of substancehood (the universal of substances). The cognition of an occurrence in a substance that is over and above the eight substances has as its qualificandum desire. That is proved true by an inference based on negative correlations.[46]

The ninth substance is the self, *ātman*. Desire is had by nothing that is not a self.

A second philosophical inference is maybe a little less system-bound, an inference to a creator based on both positive and negative correlations: "Earth and the like have a conscious agent as an instrumental cause, *since* they are effects, like a pot and unlike an atom (whatever is an effect has a conscious agent as an instrumental cause)."

a (*pakṣa*) = earth and the like
S (*sādhya*) = having a conscious agent as an instrumental cause
H (*sādhana*) = being an effect

Buddhist philosophers try to refute this by pointing to counterexamples, such as growing grass. Growing grass exhibits the prover property, being-an-effect, but not the property to be proved, having-an-agent-as-an-instrumental cause. The Nyāya reply is to point out that growing grass and all such examples are in dispute, that is to say, fall within the domain of the inferential subject (*pakṣa*), here "earth and the like," to wit, anything that is an effect but whose agential cause is not apparent, unlike the comparison class, a pot, for instance, which is clearly both an effect and has an agent as an instrumental cause. Nothing that falls within the domain of the subject can be used either as an example supporting the rule of *vyāpti* inclusion or as a counterexample, since that would beg the question. The whole point of inference is to make something known that was not known previously and here, as with the existence of atoms, the conclusion could not be known perceptually. The theological inference has the purpose of showing that things like the earth, such as growing grass, have an agent within the causal complex that brings them about. This is not something that we know without making the inference.

So, by the rules governing proper inference, the putative counterexample is rejected, and the proof looks pretty good. For, cleverly it divides all things into three categories, as Vācaspati remarks.[47] There are things that are uncreated, atoms, for instance, created things that clearly have an agential cause, such as pots, and things such as the earth and growing grass that do not clearly have an agential cause. This last category becoming the inferential subject is bracketed such that no examples can be pulled from the set.

However, another refutation refined by Buddhist philosophers over the centuries is not dismissed so easily.[48] The Nyāya argument falls to an "inferential undercutter," *upādhi*, in this case the property, having-a-perceptible-body. As we have seen (see p. 58), an inferential undercutter is defined as a property that pervades the probandum while failing to pervade the prover, that is to say, that is entailed by the presence of the probandum while not being instanced in at least one case of the prover. In symbols:

1. (x) (Sx → Ux) (Having-an-agent-as-an-instrumental-cause, which is the S or probandum property of the target inference, is pervaded by the agent's-having-a-perceptible-body, which is the U or undercutter property: all agents have bodies.)
2. (∃x) (Hx · ~Ux) (There is something that is an H but not a U; something that is an effect but does not have within its causal complex an agent with a perceptible body, e.g., growing grass.)

The two conditions being met, it would follow that there is something that is an H but not an S:

3. (∃x) (Hx · ~Sx) (Something is an H but not an S, something that is an effect but does not have an agent as an instrumental cause.)

Thus the *upādhi* defeats the apparent inference by showing that the required pervasion and entailment do not hold:

4. ~(x) (Hx → Sx) (That every H is an S is false.)

Of course, the Nyāya response is to deny that the putative undercutter, an-agent's-having-a-perceptible-body, pervades the probandum of the target inference, having-an-agent-as-an-instrumental-cause, and several rounds of objection and response centering on Nyāya's conception of God as an agent without a body are aired by Vācaspati and Udayana. This is also Gaṅgeśa's main concern. Vācaspati points out that God is like other imperceptible entities known by inference, atoms, for instance, and that our whole system of knowledge would break down if we were to reject inference to imperceptibles.[49] God like other selves (*ātman*, the category to which God belongs) is known by God's acts.

Furthermore, God's creative activity requires, like that of any agent, familiarity with the material to be shaped, like the potter's knowledge of clay and of what to do to make a pot. God's knowledge is to be conceived as appropriate to the tasks to be undertaken, such as originally combining atoms, and if God like us had to have a body to have knowledge, including the knowledge required to combine atoms, then, since bodies are combinations of atoms, there would have to be some earlier Creator to make

the necessary combinations—*ad infinitum*. Simpler than this conception is that of a bodiless Creator whose knowledge is appropriate to the material forming earth and the like but, unlike our knowledge, is not generated. This seems to be the core of Vācaspati's reasoning, which is complex *tarka*, "suppositional reasoning," targeting simplicity.[50]

God may be bodiless in essence but God is capable of assuming a body for certain purposes. For example, God assumes a body in order to teach. God is "Guru even of the ancient teachers in not being limited by time" in the conception of the *Yoga-sūtra*, which Vācaspati appears to follow.[51] Nyāya's motto in reasoning about God, atoms, ether, and other theoretic entities in the sense that they are in no instances known immediately by perception is to assume only so much about a posited cause as is necessary to account for an effect in view. Nyāya philosophers on mind-body connections, for example, formulate causal principles on the basis of correlations without bias about the sorts of things that can be linked so long as the cause has the character that makes it able to perform the role for which it is proposed in the first place. Thus selves carry desires and intentions as qualities, and atoms are colored, according to Nyāya. Furthermore, God is not omnipotent in that atoms, ether, and individual souls are eternal and uncreated, and laws of karmic justice, et cetera, are what they are independently of God's creative action. But God is omniscient (*sarva-jña*), in knowing all there is to know about everything. Otherwise, God would not be capable of playing the required causal role. Only an agent thoroughly familiar with the material with which he or she works is capable of producing the intended result, like a weaver and thread to be woven.[52]

Finally, a brief look at a third philosophical inference, to the possibility of "liberation," *mukti*, from rebirth and future suffering. From the end of Gaṅgeśa's chapter on inference:

> Then the justification (*pramāṇa*, the inference to the conclusion that suffering can come to an end for an individual), well, it is that suffering in general, or the suffering in general of Devadatta (i.e., of any individual self), is the counterpositive of a non-simultaneous destruction existing in the same locus (the self of Devadatta, namely), *since* it is a property that occurs only as an effect (connected to the destruction), or *since* it is continuous (until its end), like (the light of) a lamp. And this continuity is its being a property that occurs only as an effect (with respect to its destruction) at distinct times (in the same locus). And in this way the property to be proved (viz., being the counterpositive of a non-simultaneous destruction existing in the same locus) is also applicable to pleasure in general and the like: liberation is the breaking up of the causal chain along with its source.[53]

Here the inferential terms are the following, with the example (*dṛṣṭānta*) as the light of a lamp:

a (*pakṣa*) the suffering of a particular (transmigrating) self P
S (*sādhya*) being the counterpositive of a non-simultaneous destruction existing in P
H^1 (*hetu*) being a property that is exclusively an effect
H^2 (*hetu*) being continuous (until its end)

The destruction that is *mukti* is not of current but of future suffering, thus a "non-simultaneous" destruction. The destruction exists in the same locus as the suffering that would occur were it not blocked. The suffering does not really occur—it never comes about—and so its ontological status is problematic—the flood prevented by the new dam. Clearly, it does not cause anything, though to prevent it people do set out in action. The blocked future suffering is an effect only in connection with the bringing about of the destruction in relation to which it is the absentee or counterpositive, *pratiyogin*. Any destruction is *of* something (the counterpositive) *at* a place or locus. The example appears to work only with the second of the two provers mentioned: like a lamp's stream of light that can cease absolutely, the suffering of an individual goes on continuously—in the sense of regularly if not without occasional spells of pleasure—until its absolute end. Pleasure is similar.

The obvious observation in overview is how much these philosophical inferences rely on the Nyāya system. But note that the last seems systematic all right but also suspiciously informed by an extra-system religious consideration, thus forced. Of course it seems that way because the whole discussion has been introduced by Upanishadic testimony. Nyāya philosophers see the Upanishads and other sacred texts as the testimony of yogins or of God taking a body in order to teach. The other two inferences have their merits without this deficiency (the theological one is hardly to the all-powerful God of popular religion and theistic Vedānta), particularly given the epistemic concession we reviewed concerning the availability of the probandum with the inference to being-enselved. Tying up tightly with system is philosophically a good thing, it seems to me, although to reconstruct the reasoning may call for considerable digging, as, for example, with the *mukti* inference.[54]

FALLACIES AND DEBATE THEORY

The entire fifth and final book of the *NyS* is devoted to fallacious objections (*jāti*) to a cogent inference for others along with points for formal censure in a debate (*nigraha-sthāna*) including fallacies of the prover (*hetv-ābhāsa*). Let me paint some background. Debate on metaphysical topics is reported in the oldest Upanishads, and there are debate manuals in Hindu, Buddhist, and Jaina monastic traditions from very early. In what is probably the oldest Upanishad, the *Bṛhadāraṇyaka* (c. 800 BCE), King Janaka is depicted

awarding prizes to one Yājñavalkya who in public debate has vanquished all comers (about the truths of Brahman and the self, *ātman*).[55] Evidence abounds that organized philosophical debate was a common practice long before Nāgārjuna and the final redaction of the *NyS*.[56] In the *Mahābhārata* ("Great Indian Epic"), some of the fallacies that come to be minutely analyzed some ten centuries afterwards are spelled out by one Sulabhā, an outsider female character speaking in a king's court on *mukti* and then, challenged, on what counts as a good speech.[57]

B. K. Matilal writes summarily about the origins of logic in India, "Logic developed in ancient India from the tradition of *vāda-vidyā*, a discipline dealing with the categories of debate over various religious, philosophical, moral, and doctrinal issues."[58] This may well be right, but I should like to say a few words about debate and inference that tempers the judgment. For example, it would be wrong to think of Gautama's treatment of fallacies and winners and losers in a debate context as at all significantly rhetorical, concerned with procedure (although failing to state a thesis could be termed procedural), character of the opponent or the audience, or other irrelevance from an epistemic point of view. Rather, his treatment in the sūtras of chapter 5 centers on proper inductive procedure as relevant to the standard paradigm of inference. Such a focus continues through all periods of Nyāya literature.

To be sure, the *NyS* mentions three types of debate: (a) *vāda*, which is aimed at finding the truth, along with (b) *jalpa* and (c) *vitaṇḍā*, which are aimed only at victory and where making tricky arguments is appropriate (so long as you don't get caught).[59] Vātsyāyana implies that one should take into account personal character (including the nature of the beliefs held by an opponent) in deciding a debate strategy. True inquiry, *vāda*, is carried out among friends and teachers who are all committed to ascertaining the truth, whereas wrangling and captious argument (*jalpa* and *vitaṇḍā*) are only for the purpose of defeating a malevolent adversary and to protect right views from public attack, as thorns are used to fence and protect young shoots.[60] And Vātsyāyana says that we should not trust those who purport to demolish others' views without trying to establish their own.[61]

All this I wish to acknowledge while making just one remark: all Nyāya texts are in effect *vāda*, "discussion" aimed at discovering and expressing the truth. Not only does this hold for metaphysical topics but also rhetorical strategies are not a topic of later Nyāya works except to expose them as fallacies (the exposing amounting to a winner) whereas there are tomes on why the logical and inductive fallacies do not lead to the truth. The point is to be aware of tricky arguments so that one is not fooled. There are no examples given of tricky arguments to be employed against a Buddhist or another opponent. On the contrary, the positions and arguments of other schools are taken quite seriously, and the "winners" and "losers" laid out in the *NyS* derive their status as winners and losers from the cogency of the standard pattern of inference including, to be sure, the evidence for a pervasion or general rule.[62]

Adversarial debate may have epistemic relevance nonetheless. As remarked, a successful counterinference undercuts warrant no matter that our inductive base seems solid. As Kisor Chakrabarti elaborates, a principle he designates GAIE, the "general acceptability of inductive examples," is embedded in the discussions of *NyS* chapter 5.[63] A counterexample defeats putative knowledge of a pervasion, and thus should be held to a standard of evidence that, if lower, as Gaṅgeśa suggests (recall our discussion of the dubious *upādhi*), than that of the inductive set of positive and/or negative correlations on which some bit of putative inferential knowledge is based, should not be much lower. No mere possible candidate is conclusive, but rather that a counterexample is at least plausible should be acceptable to all parties (the undercutting of the Mitrā inference relies on real possibilities). The Buddhist counterexample to the Nyāya inference to God we just discussed, growing grass, does not count as a veritable counterexample from the Nyāya point of view since it is off-limits as part of the inferential site, *pakṣa*. The issue is: Do we know that growing grass does not have an intelligent maker? Buddhist philosophers say yes; Nyāya philosophers say no. Similarly, Buddhists do not accept the examples of a pot and a palace as relevantly similar to earth and the like, since though both are effects and have intelligent makers those makers could not make earth and the like and thus are not relevantly similar. There is thus philosophically a stand-off. Our philosophical inferences do not go through for everyone—as we saw Gaṅgeśa admit if for the slightly different reason of the availability of the probandum.

Perhaps, then, the conclusions of these should not count as knowledge, not as *nirṇaya* in any case, not as reflective knowledge.[64] However, that these and other philosophical inferences should count as *nirṇaya* seems the motivation of Vācaspati, Udayana, and the others, it seems safe to say, driving some of their most innovative reasoning. There are lots of arguments that are still largely unexplored by modern scholars, including suppositional reasoning, *tarka*, both negative (*pratikūla*) and positive (*anukūla*), especially with Udayana.[65]

5 Analogy

Analogy, *upamāna*, "comparing," is in several classical schools the way we know the similarity between two things (or more), which can be important to know for different reasons. Mīmāṃsakas, "(Vedic) Exegetes," to provide an interpretation of Vedic injunctions suitable for practice in actual performances need to be able to designate substitutes, of one type of grain for another, for example, or one animal for another, depending upon availability in the first place but in the second place similarity. Similarity is a secondary criterion governing the choice. In Vedānta, analogy is said to be useful for understanding the Upanishads which make comparisons between spiritual or yogic experience and the experiences of ordinary humans.[1] A similar utility is identified in the case of understanding Vedic words such as '*svarga*', "heaven," the gaining of which is said to be the purpose of certain sacrifices.[2]

Logicians, such as the late Yogācārins along with Nyāya philosophers, Jainas, and others, find similarity, or relevant similarity, to figure in inference as a knowledge-generating process. It is through cognizing similarity—and dissimilarity—that we arrive at knowledge of pervasion as required for inferential knowledge.[3] A kitchen hearth counts as an "example" in the stock inference because of its relevant similarity to the mountain which is the center of inquiry. It is part of what is called the *sapakṣa*, the set of positive correlations, that make us know an inference-underpinning pervasion. Knowledge of similarity is not viewed in Nyāya as the result of analogy as a knowledge source—analogy is restricted in scope to a subject's learning the meaning of a word. But pervasion is known through generalization from cases—or even a single case—not only according to the Buddhist Dignāga but also Maṇikaṇṭha Miśra among New Naiyāyikas[4]—presupposing knowledge of relevant similarity.

Inference aside, Nyāya philosophers think that analogical knowledge can serve various practical purposes. Vātsyāyana mentions medicine and the example of someone directed to look for a certain herb with which he is unfamiliar but which, he is told, resembles certain other herbs in ways laid out. The subject's recognizing the desired herb by its similarity to the others known beforehand is crucial to his securing the medicine, Vātsyāyana

implies.[5] One would think that Udayana, among others, would employ the means theologically to introduce terms like '*īśvara*', the "Lord," but I have been unable to find the Thomist idea of analogical predication in Nyāya.[6] The slightly maverick tenth-century Nyāya philosopher Bhāsarvajña jettisons Gautama's commitment to analogy as a distinct knowledge source, and the Nyāya position is attacked from many corners.[7]

What comes to be a stock example of analogical knowledge is indicated even in the terse sūtras of Gautama and is elaborated in the commentaries and textbooks well into the New Nyāya period.[8] Note that the example is wired to the Nyāya account. Other schools present different pictures of the knowledge source and its results. The Nyāya scenario has it that a subject S inquires of a forester about a *gavaya*, which is a kind of buffalo, having heard the word '*gavaya*' used among his schoolmates but not knowing what it means, i.e., not knowing to what '*gavaya*' refers. Questioned by S, the forester replies that a *gavaya* is like a cow, mentioning certain specifics as also some dissimilarities. To simplify, Nyāya philosophers say that the forester makes an analogical statement ("A *gavaya* is like a cow"), whereby, according to Gaṅgeśa and followers, our subject S now knows in general (*sāmānyataḥ*) what the word means. But S does not yet know how it is used, does not know its reference, which is deemed its principal meaning.[9] Later encountering a *gavaya* buffalo, S says, "This, which is similar to a cow, is the meaning of the word '*gavaya*'," a statement which expresses S's new knowledge. Every bit of knowledge has a source, and this one has been generated by *upamāna*, "analogy."

The objection that so-called analogical knowledge can be explained as knowledge, to be sure, but knowledge resulting from perception and inference (along with testimony, which itself reduces to a combination of the workings of perception and inference according to Vaiśeṣika and Yogācāra), is also mentioned by Gautama, laconically.[10] The commentators provide the answer that the knowledge had by S in the example is not inferential in that the conditions for inference are not met. These include having a known inductive base. However, no other *gavaya* buffalo has been encountered by S in the stock example. Furthermore, bits of analogical and inferential knowledge are brought about by different cognitive triggers, the one by "reflection" (*parāmarśa*), as explained earlier, and the other by perception of cow-similarity in a present *gavaya*, i.e., perception informed by an analogical statement. Of course, the results also differ in kind, as is said in the last sūtra of the set.[11]

Nyāya sees meaning as conventional as opposed to a Mīmāṃsaka nonconventional, intrinsicality view. Conventions have to be learned. S begins to learn the convention for '*gavaya*' without knowing it fully. S knows better what to look for from the analogical statement of the forester, namely, an animal that resembles a cow. But S knows only in general, not fully or in particular, until encountering a referent, an actual *gavaya* buffalo, and putting the information together, S comes to know and exclaim, "Now that's what the word means!"

LEARNING WHAT WORDS MEAN

Nyāya philosophers pay quite a lot of attention to variations on a stock example of language-learning on the part of a child hearing an elder's command, "Bring the cow," and observing a cow being brought.[12] There is much controversy about this and in general about word and sentence meaning. The *NyS* itself contains a considerable stretch of sūtras about word meaning, *NyS* 2.2.55–66, which are almost exclusively (except for the remarkable sūtra 2.2.59) about reference, *abhidhā*, as opposed to indirect, figurative meaning, *lakṣaṇā*, which will be discussed by us in the next chapter.

Grammarians distinguish three types of reference in a schema that becomes widely employed (for example, in aesthetic textbooks, *alaṃkāra-śāstra*, as well as in the literature of the philosophic schools):[13]

(1) *rūḍhi*, "the conventional"
(2) *yoga*, "the derivative"
(3) *yoga-rūḍhi*, "the derivative and conventional"

For Nyāya, the conventional, *rūḍhi*, is a matter of cultural mandate, as when the name 'Chaitra' is stipulated, so to say, to refer to a certain individual by Chaitra's mother.[14] There is a direct relation between word and object unmediated by meaning belonging to the word's semantic parts, if the word has them, etymologically considered. The word 'cow' for example has no parts and is straightforwardly conventional in meaning cows. But 'doghouse' has its meaning determined by a combination of the meanings of 'dog' and 'house'. There are other compound words, however, for example, 'windfall', whose denotation is not dependent on the meaning of the etymological parts, as a windfall is a "dead metaphor" and no longer carries the meaning of a bounty knocked by the wind to the ground. Similarly, the Sanskrit '*maṇḍa-pa*', is used to refer to ascetics without implying that they are "(alcoholic grain-)scum-drinkers," an example discussed in the next chapter (see p. 93). In English, an example of the third type is 'White House' used to refer to the office of the U.S. President. The compound has been conventionalized and refers as a whole, but the building that houses the offices of the President and his top officials is indeed white. In Sanskrit, a stock example of the third type is '*paṅka-ja*', "mud-born," which refers to lotuses. The meaning is conventional in that it is lotuses that are meant and not some other species of plant or animal that lives in mud. But lotuses are indeed mud-born, and so the meaning of the word is also derivative.

Verbs as well as nouns have denotation. The verb 'cook' by primeval convention picks out the action of cooking whether in general or in particular or both—indeed like all words that function as single semantic units independently of their parts to express a single meaning. The second category, derivative or etymological meaning, *yoga*, results not just from compounding but also from grammatical derivation primarily through the addition of suffixes and prefixes. For example, in Sanskrit '*pācaka*', which means a cook, is derivative from the verbal root 'cook' ('*pāc*') through affixation of the agential suffix '*aka*', combined (*yoga*), so to say, to mean a cook. The reference can be analyzed in terms of the referential functions of the parts of the word. As the ultimate parts into which a derivative is analyzed are themselves conventions, *rūḍhi* emerges as the foundational type of reference.[15]

Reference, *abhidhā*, is thought of as the function of a word with respect to an object or objects, that which is referred to. Now objects are analyzed in terms of the Vaiśeṣika ontology from as early as Gautama and Vātsyāyana, but there is also a simpler schema elaborated by Vātsyāyana who says that meaning connects words with individuals, universals or general characteristics, and form or shape. That is, of three candidates for the referent of the word 'cow', for example, championed by one or another philosopher or school—(1) the individual (Bessie the cow) or group of individuals, (2) the universal or class characteristic (cowhood), and (3) a shape (the shape of a cow as with a pastry or chocolate cow)—Vātsyāyana says that context of usage determines which is predominant or subordinate but also that all three are normally meant.[16]

The New Nyāya view is that individuals are directly referred to in sentences not just simultaneously with a universal or another repeatable characteristic but as qualified by the generality.[17] Now enormous controversy breaks out over generality, just among Mīmāṃsā and Nyāya philosophers, not to mention Buddhist nominalists. Both of the main camps of Mīmāṃsā view the universal as the primary meaning of a word. The Bhāṭṭa, as reported by Gaṅgeśa, holds that the individual is known only by a kind of inference, which in the Bhāṭṭa's own view is more precisely the independent knowledge source, "circumstantial implication" (*arthāpatti*, discussed in note 41 to chapter 4). Gautama's final position seems to make a concession to the Bhāṭṭa by admitting that context determines whether we are talking principally, one, about Bessie or, two, the cow as a type or, three, shape as in a cow-shaped pastry. But Gaṅgeśa argues at length that the Nyāya *siddhānta* is that reference is to be understood as to an individual as qualified, a qualificandum qualified by a universal or another repeatable character such as shape (*eka-vṛtti-vedyatā*).[18] The main argument is that the conditions sufficient for cognition of an individual are also sufficient for cognition of a general characteristic, since we never have a cognition of a bare particular as bare.

Unfortunately, pragmatics is not much developed in Nyāya, which pretty much leaves the field to Mīmāṃsā. Still, Nyāya does embrace a holism about sentence meaning, where speaker's intention is championed as in some cases playing a crucial part in the analysis of what is meant. Clearly contextual factors are recognized, such as prior beliefs of a hearer. As we shall see in the next chapter on sentence meaning and knowledge from testimony,

context of usage is also key to some instances of figurative meaning, in the Nyāya view. Analogical knowledge, however, is not simply a matter of comprehension through simile or metaphor.

The examples of learning the meaning of words given in Mīmāṃsā look a lot like Western examples of learning by ostension. But there are also words like '*ākāśa*', "ether" (the medium of sound), which are viewed as technical terms learned in the course of learning a system through definitions not evident in the practices of everyday speech, *vyavahāra*.[19] Grammatical derivation may, as pointed out, depend ultimately on root conventional meanings. But that is not the whole story, since there are also combinational rules, at least some of which one learns by studying grammar. Grammar is looked upon as an auxiliary art crucial to understanding the Veda—this seems the pertinent bit of cultural context, as well as to note that there was a tradition of grammarian literature predating and running alongside Nyāya and Mīmāṃsā for centuries, to which the philosophers quite often refer. We might also mention dictionaries, which are commonly listed as one of the ways we learn the meanings of words, though this is only a special form of testimony.[20]

Testimony, however, is not, in the Nyāya view, the only way we learn the meaning of words. There are, furthermore, problems with the standard theory inherited from Mīmāṃsā, as Gaṅgeśa and others bring out. For example, the child in the stock example learning the meaning of "Bring the cow" by witnessing a cow being brought when a grown-up uses the words, is not, at least not when very young, able to differentiate individual semantic units.[21]

In any case, analogy is, while not the only way or even the most important, a unique source for learning, for the first time, the meaning of a word. A referent is indicated not by direct denotation but by a kind of indirect ostension—as red is said to be the color of ripe apples or of blood exposed to air. Such a definition of 'red' tells us where to look (at blood or apples) to learn the word's meaning.

"INDIRECT INDICATION," *UPALAKṢAṆA*

Analogy appears to work through an appreciation of sense independently of reference. The analogical statement of the forester seems to convey the sense of the word '*gavaya*' which S understands before S understands the referent. Nyāya philosophers talk about speech acts that employ "indirect indication," *upalakṣaṇa*, in ways that suggest the Fregean theory of sense determining reference. There are, however, large differences.

In the classical Indian context, the issue with Nyāya is how does our subject S understand the analogical statement sufficiently well on the one hand to be able to recognize the newly encountered animal as a *gavaya* buffalo,

and insufficiently well on the other that the meaning of '*gavaya*' is not understood by S before encountering one in the flesh? Gaṅgeśa voices the mainstream view when he insists that the word's reference is not grasped without the perception of at least a single referent, but that also (here some Nyāya philosophers disagree) experience of more than one referent or even of the same referent on more than one occasion is not needed. We grasp the reference of 'Chaitra' on a single occasion of use, although the word indicates Chaitra at other times, too.

Meaning is in the first place a matter of reference, a direct relation between word and thing. Use of a general term like 'cow', however, does not directly refer to all cows, past, present, and future, but only indirectly "suggests" or "indicates" them in such a case as Bessie's being said to be a cow (i.e., to have cowhood, in the Nyāya analysis, like all cows, present, past, or future). Again, learning a word's reference need not involve ostension. A general characteristic can be indicated indirectly. A general characteristic can also indirectly indicate particulars, as in the operation of analogy. In other words, S does know something in general about what a *gavaya* is (namely, similar to a cow) from the forester's statement. This is not to say that S grasps the universal, being-a-*gavaya*-buffalo, since universals dwell only in particulars and are in the very best way known only as exemplified. However, similarity can be an indicator—the sharing of characteristics such as having-horns and so on—such that S has a proto-understanding, has begun to grasp what a *gavaya* is. The suggestion (*upalakṣaṇa*), the indirect "indication" as opposed to direct reference, accomplished by the forester is sufficient to allow analogical knowledge to arise upon S's recognition of the cow-similarity exhibited in a critter encountered in the flesh.

Gaṅgeśa points out (see the appendix, p. 121) that with words that are derivatives (*yoga*) the power of reference is etymologically in conformity with that from which it is derived. He says explicitly that from "etymology there is also indication (*upalakṣaṇa*) that fixes (general meaning or sense, though not necessarily a specific reference)." For example, a lotus known as "mud-born" could guide a person's identification of lotuses for the first time, being indirectly indicated by the meaning of the attributive.[22]

A word's having a power of indirect indication seems to be an idea close to that of a word having connotation, as opposed to denotation, as discussed, for example, by J. S. Mill (whose nonconnotative/connotative is a precursor of the Fregean reference/sense distinction).[23] But there is at least one strike against such an interpretation. In indirect indication almost anything can be used to fix an expression's reference. Common examples are "By the matted hair, it's an ascetic" and "By the hovering crows, it's Devadatta's house." With these two instances, both of which presuppose a conversational context, the referent (the ascetic, Devadatta's house) are indirectly indicated by things (matted hair, hovering crows) that have little or nothing to do with the nature of the thing indicated. Thus sense is not the only referent-indicator but rather quite extraneous things can serve such

as the hair and the crows. In his perception chapter, Gaṅgeśa distinguishes between a true qualifier and an indicator used merely to fix reference by a principle of non-opposition.[24] We cannot know Devadatta's house as without shape, or an ascetic without humanity, but we can know immediately following the use of crows to indicate it that Devadatta's house is without crows. Similarly, the ascetic could shave his head.[25] On the other hand, like Mill's "connotation" and its connection with poetry, indirect indication connects with the independent verbal power called *lakṣaṇā*, "figurative speech," which is for Nyāya a second power of words in addition to reference. Technically, a *gavaya* is literally like a cow. But our ability to understand general features indirectly indicated makes possible both communication with figurative speech (including poetry) and the working of analogy as a knowledge source. (There is a section on figurative speech in the next chapter.)

In sum, an appreciation of what it is to be similar to a cow is not in itself sufficient to fix the reference of '*gavaya*' for S, our classical urbanite who has never seen one. But it does make him ready to acquire the word when he recognizes the animal by its cow-similarity.

THE ONTOLOGY OF SIMILARITY

The working of analogy depends upon real-world similarity between things compared, but the ontology of similarity is tricky business. In the translation appended here, Gaṅgeśa presents his own theory along with those of several others, in particular Mīmāṃsakas.

Similarity according to Gaṅgeśa is a supervenient relational property: something's having a lot of the same properties as something else. It is not a universal, he argues, for similarity relates a correlate (the *gavaya* buffalo) and a countercorrelate (the cow), whereas a universal, in contrast, rests as a unity in, for example, with cowhood, all individual cows. In this way, it is like contact, *saṃyoga*, but there are also rather obvious differences. It is not reducible to any single category among the traditional seven. For some substances are like one another as are certain qualities and actions. But similarity also is not, *pace* the Prābhākara, a category over and above the recognized seven. Gaṅgeśa's main argument there is that similarity is not uniform. It is to an extent a property that is mind-imposed in that the counterpositive (the cow) is supplied from our side. Moreover, it supervenes on other properties.

To hold that similarity is not a universal is not to say that there is anything grammatically or in any other way wrong in pointing out that one cow, for instance, is similar to another. One cow is indeed similar to another, and on the basis of cognized similarity we recognize universals (and other general characteristics) as well as the pervasions that underpin inference. Similarity and dissimilarity supervene on common properties

and absences of common properties. In some cases an underlying similarity is made manifest by indicator properties such as having-horns for a cow and a *gavaya* buffalo alike. But in other cases similarity is directly manifest in, say, two cows.

The main arguments for the one or another ontological view trade on considerations of everyday usage, *vyavahāra*. In particular, a theory of similarity must be able to explain why we say that some things are only a little similar to other things whereas sometimes we say that there is a lot of similarity. An adequate ontology of similarity should explain how the critter could vary like this, and so, again, similarity cannot be a universal, Gaṅgeśa argues, since universals do not vary like this. Something is a cow or is not a cow. It is inadequate to say that the evidence for—or manifestation of—the universal varies, since a pot does not vary in its pothood by how evident is its existence. Other views and arguments are presented by Gaṅgeśa in the appendix. Let us desist and move on to consider testimony (probably the most controversial of Nyāya's knowledge sources) with just one further remark having to do with Nyāya's two-faced policy of analyzing entities ontologically.

Similarity is an example of a property that can be explained as nothing more than a way of grouping other properties. In contrast, analogy as a knowledge source although involving the operation of perception and testimony is nevertheless a unique and irreducible way we get knowledge of a certain sort. This seems to be Gaṅgeśa's central point in his analogy chapter. And his arguments show (along with some other considerations), I shall maintain in Chapter 7, Nyāya's willingness to admit *pramāṇa* in addition to the canonical four, no matter that they depend in some way or other on perception or another source.

mleccha—can be the experts whose statements convey to us testimonial knowledge, provided, as always, they know the truth and want to communicate it without deception.

The process of generating testimonial knowledge begins with a speaker S who knows some proposition *p* by perception, inference, or testimony (chains of testimony are okay so long as there are no broken links) and who has a desire to communicate *p* to someone or other. A hearer H gains knowledge through a speech act of S communicating *p* to H, who has to be competent in the language in which *p* is expressed, to know all the words and grammatical forms, which, on the Nyāya account, H has learned also chiefly through testimony but also in other ways, as we have seen. Vātsyāyana elaborates the causal process whereby individual letters, then words, then the series of words that comprises a sentence is understood.[6] Thereby he focuses attention on the hearer. But he and all Naiyāyikas of the Old school seem mainly concerned with speaker conditions for testimonial knowledge, in particular what is required to be an *āpta*, a trustworthy authority.

New Nyāya takes the statement under the interpretation of the hearer H to be the proximate cause, the trigger of knowledge-acquisition.[7] The certification conditions on which Gaṅgeśa and company focus govern the meaningfulness of a statement from H's point of view, since, Gaṅgeśa argues, S's knowing the truth, etc., cannot be established without H's understanding something even if it is false.[8] Gaṅgeśa admits speaker's intention understood in a general sense as a causal factor. But the immediate trigger of testimonial knowledge is the statement itself. The knowledge gained is of what the statement says, the fact it indicates, not of the speaker's intention, though, as we shall see, determining speaker's intention is crucial to determining meaning in cases of ambiguity and in some instances of figurative speech. Nevertheless, depending on what is said, we could eliminate doubt through perception or inference as well as by checking the credentials of the speaker. For Gaṅgeśa and company, it is no longer the speech act of the expert who knows and wants to communicate without deceit that is the proximate cause of acquisition of knowledge through testimony but rather the embedded information, the proposition contained in it as understood by H.

The argument that we have to understand first S's statement in order to check S's credentials, which establishes the sentence itself as the trigger of testimonial knowledge, is, contra Arindam Chakrabarti, why there is the shift of focus, not the knowledge status of true cognitions with "flaws" in their etiology.[9] Chakrabarti, who does not give a citation though he purports to be giving Gaṅgeśa's position, apparently mistakes a Prābhākara *pūrva-pakṣa* for Gaṅgeśa's *siddhānta*.[10] His reading is that a parrot can make us know something (like a tape-recorder). And even a liar deceived into believing ~*p* can communicate *p* trying to deceive H who nevertheless comes to know the truth through S's statement. However, these are Prābhākara examples given in a *pūrva-pakṣa* section, examples designed to show the falsity of the view that testimonial knowledge depends on knowledge of the absence of epistemic flaws in a speaker S. Gaṅgeśa would not admit that the true cognitions in these instances were "source-born," *pramāṇa-ja*. He says explicitly that S's "intention," *tātparya*, is crucial for testimonial knowledge.[11] The speaker's intention is not the trigger of testimonial knowledge on H's part, but is a slightly upstream causal factor relevant for certification. If we knew it were a parrot or a liar who was responsible for the statement, we would no longer believe. It is true that H has to understand something in the case of the parrot, etc. Otherwise, there would be nothing to check in finding out that the parrot's speaking is a case of "apparent testimony," *śabda-ābhāsa*—a point that Gaṅgeśa makes himself.[12]

TESTIMONY NOT A FORM OF INFERENCE

Gautama devotes a stretch of sūtras to the position (of Vaiśeṣika, later of Buddhist Yogācāra) that so-called testimonial knowledge, while indeed knowledge, is a form of inference.[13] Although the reply, the *siddhānta* sūtra (*NyS* 2.1.52), is hardly detailed, Vātsyāyana and company have no trouble refuting the position: the certification conditions are different for the two knowledge sources.[14] In particular, there is no memory of pervasion, *vyāpti-smaraṇa*, informing testimonial knowledge. Or, if there is, for example, between a word used in S's statement and the word's meaning (a connection required for us to understand one another from one occasion to the next), the memory would be an auxiliary factor included in a bundle of necessary conditions very different from those required for inference. Both inference and analogy depend on other knowledge sources in their operation, as does testimony, but are irreducible all the same, as we have seen.

A second type of refutation is alleged by J. N. Mohanty, and is indeed implicit in what a host of Naiyāyikas say from Vātsyāyana through Gaṅgeśa and on. But it is not expressly mentioned by Gaṅgeśa in his long, express refutation of the Vaiśeṣika position that testimony is a form of inference.[15] It is that apperceptively we can tell an inferential cognition from a testimonial one. "I know this from having heard it" as opposed to "I know this by having inferred it." The reason that Gaṅgeśa does not expressly mention this argument in his own refutation of the inferentialist position is that the Vaiśeṣika opponent is considered perfectly capable of apperception, and what we do to defeat his distinct description of the controversial bit of knowledge apperceived is to point to one or another feature that distinguishes it from inferential knowledge, not simply to claim that it is all self-evident. Nevertheless, Mohanty is right. Through apperception, which is a form of perception, we know a cognition as qualified by its epistemic type, which is to us then directly evident, as with all perception, but about which we could be mistaken. We may know a cognition's content, its intentionality, infallibly in apperception, but we can be mistaken about cognitive

type, as with the truth or falsity of any putative perception. That's why it is possible to have a debate, taking the Vaiśeṣika to call our position into question. Furthermore, there may be, we may admit, marginal cases about which anyone could be confused. However, how normally obvious the difference! Testimony is a matter of being informed by someone else, whereas inference is carried out by oneself and at least initially for oneself.

A third type of response is put forth by Vācaspati to undermine a contention he attributes to Dignāga that testimonial knowledge reduces to a form of inference in that we reason from what S says together with the fact that S is a trustworthy authority to the conclusion that what S says is true.[16] The response is that Dignāga runs together the two levels of knowledge: we may know *p* by testimony without having certified *p* as true. Knowledge of S's credentials is relevant to certification and second-level reflective knowledge, but it is not to the first-level—unless there are standing defeaters such as H's prior knowledge that *p* is false. If I yell out in the middle of a lecture asking whether the water-fountain in the hall, which is not immediately perceptible by me, is working or not, and someone else (I know not whom, I hear only the voice) yells back "Yes," then I have knowledge that the water fountain is working so long as it is in fact. I do not have to know whether the speaker has an honest character, unless my water-fountain knowledge somehow gets challenged or undermined. The reason given by Dignāga shows a certification condition, not the operation of testimony. There is indeed testimony in the type of case envisaged: *p* has to be already comprehended if there is to be a reason given why we should believe *p*. Dignāga is targeting a bit of testimonial knowledge and providing second-level certification.

Now for these and other reasons (though not, I think, by any study of Nyāya), recent philosophic literature on testimony has begun to criticize an inferentialist position similar to Dignāga's embedded in David Hume's discussion of miracles and elsewhere: we have to know that the testifier is trustworthy on the topic and then infer that what she says is true.[17] As early as the nineteen-sixties, H. H. Price, though overall an internalist and foundationalist, began to move in the direction of Nyāya's position that acceptance and understanding are normally fused.[18] Recently P. F. Strawson writes, expressing now a widespread opinion:

> In any community of language-users, perception, memory, and testimony are not only equally *essential* to the construction of the belief-or-knowledge systems of its members. It is also true that all three are on an equal footing in that there is no possibility of a general reductive analysis of any one of the three in terms of the others, supplemented by inference. The interdependence of all does not entail the reducibility of any. If we (often) know, directly and immediately, what our eyes tell us, then we (often) know, no less directly and immediately, what other people tell us.[19]

Of course, inference is taken in analytic philosophy to have much broader scope than Nyāya's *anumāna*. Thus an inferentialist account of testimony might not look inferentialist to Nyāya and be cogent nonetheless. "The testimony debate is largely over whether testimony-based beliefs are epistemically inferential or, like perception, memory, and introspection-based beliefs, epistemically direct," writes Peter Graham in an overview paper reviewing recent work on the epistemology of testimony.[20] Graham lists eleven leading philosophers who argue the "direct" thesis in a couple of dozen books and papers—citing the Scottish philosopher Thomas Reid (1710–1796) as the classical (Western) source of the thesis, that, as claimed by Nyāya quite a bit earlier, we get knowledge directly from being told.

STATEMENTS AND FACTS

As mentioned, a stretch of sūtras in the *NyS* is devoted to the topic of word meaning.[21] The principle candidates are the genus (cowhood), the individual (Bessie), and shape or general form (a cow's configuration and anatomy, *ākṛti*). The *NyS*'s *siddhānta*, "established position," is that all three are simultaneously intended and understood (although Vācaspati insists that only the individual is *denoted* by a word, the universal and shape being *indirectly indicated*[22]). The one or the other becomes the predominant or subordinate element in different contexts of usage but all are in some sense meant. According to New Nyāya, every common noun is connected in use not only with a qualificandum but also a predicate or qualifier place in the schema "Q(a,φ)" where 'a' represents a qualificandum, 'φ' a qualifier, and 'Q' the qualificative relation. To say in Sanskrit, "*gauḥ*" ("Cow" in the nominative case, thus "[Here is a] cow" by ellipsis), is to say that there is something, a, the thing in front of us, that has, or is qualified by, φ, cowhood. The predicate in this case expresses a genuine universal, but in other cases the "grounds of usage," *pravṛtti-nimitta*, is something else, the individual's having a certain (proper) name, "(This is) Devadatta," for instance, Devadatta as qualified by having-the-name-'Devadatta'. Thus for Nyāya reference hits a thing as qualified by a qualifier. The qualifier in a general form may be called a word's sense.

A bit of testimonial knowledge has unity, which is reflected in the unity of the transmitting sentence. For a hearer H to get knowledge from being told, at a minimum there has to be a sentence and not just a word or a list of words. Each sentence spoken by S would be potentially a generator of a bit of knowledge for H, given that H meets the hearer requirements. A single word, a proper name, let us say, which some in India and in the West (e.g., Frege) view as having a complete or saturated meaning in isolation, would be, employed in the mouth of S, a sentence according to Nyāya. The school admits single-word sentences consisting not only of verbs ("Go!") but also of nouns, even proper names. Since use in Sanskrit

(as opposed to mere mention as in spelling a word) requires that a noun be declined, a single name ("Devadatta") would, depending on the case sign (itself counted a semantic unit by Nyāya, thus an inflected noun is really two words, two semantic units, plus their grammatical relationality), be in the vocative case (thus "[Hey] Devadatta!") or the nominative, accusative, instrumental, etc., where a verb would be elliptically understood according to syntactical "expectancy" and extralinguistic context (thus, e.g., "[This is] Devadatta").[23] All words used have, in the Indian terminology, "expectancy," *ākāṅkṣā*, for one another, the fulfilling of which completes a sentence. A bit of testimonial knowledge arises when H hears the last word of the utterance and recalling the previous words/meanings complete with their mutual expectancy grasps and at the same time accepts ("learns of") the fact expressed by the sentence. Seeing me looking for my glasses, my wife says, "They're in the kitchen," and I know where they are when I hear and understand "kitchen" in relation to the meaning of the other words.

In classical Indian philosophy, three theories compete to explain sentential unity. There are two Mīmāṃsaka theories, one of which is embraced by Nyāya, as well as a radically holistic theory propounded by the grammarian, Bhartṛhari (c. 450). Bhartṛhari holds that words have no meaning outside the context of the sentence, which is the basic semantic unit. Words are abstractions from sentences, and a sentence is understood holistically "in a flash" (*sphoṭa*—Bhartṛhari's theory is called *sphoṭa-vāda*). This is an easy target for the Mīmāṃsakas, who point to our abilities to use the same words in different sentences.[24] But the one camp, the Prābhākara, agrees with the grammarian that words do not convey meaning apart from the full sentence being understood, that is to say, apart from the full fact indicated being known "in a flash," as it were. The other camp, the Bhāṭṭa, whose theory comes to be taken over by Nyāya, claims that individual words have reference in isolation, and that in understanding a sentence we understand the meaning of the individual semantic units which get combined by the sentence, by the fulfillment of the syntactic expectancy along with the meaning of the words, to mean the things denoted *in relation*. These two views are termed in Sanskrit *anvita-abhidhāna-vāda*, "reference of the connected," which Mark Siderits translates as the "related designation view," and *abhihita-anvaya-vāda*, "connection of the referents," which Siderits translates as the "words-plus-relation view."[25]

To translate may not be, as in the French expression, to betray (*de traduir est de trahir*), but it is surely to interpret, and, I'm afraid, Siderits' translation of the second Sanskrit term is badly misleading. The relation is not just an additional element: it's not words-*plus*-relation. There are only a few purely logical and syntactically binding words in Sanskrit, only a few (mainly connectives) that are just syncategorematic, since every word is inflected and there is no need for prepositions, etc.[26] Alternatively, we could say that every word is unsaturated because no word, no single semantic unit, conveys the meaning of a sentence by itself alone independently of its relation to at least one other unit. The main difference between the two views is that the former insists that only a sentence successfully refers, not the individual words of which a sentence is composed, whose meanings have to be connected to one another in order for there to be reference (*abhidhā*, the primary mode or power, *śakti*, of language); whereas the latter holds that words do have reference individually but not to the connection of the things mentioned, which is given by the sentence as a whole. In both cases, the fact or object known by way of a sentence has constituents. On the second view, the fact is the relatedness of the words' referents as they are in the world, a relatedness (*anvaya*) not indicated by a semantic unit. The connection is to one another of the things referred to, a connection in the world which we become aware of because of the order and connectedness (*anvaya*) of the words.[27] And on the first, there is, as far as I can tell, the same ontological critter, i.e., the fact or object that is structured the way the words say but designated only by a prior combination of meanings.

Siderits considers the Bhāṭṭa/Nyāya view far less worthy of probing than its historical rival which he connects, creatively, with the Buddhist "exclusion" (*apoha*) nominalist theory of meaning. But it seems to me that it is the Prābhākara word meanings apart from the sentence that are mysterious, not those of Nyāya, where word meaning is the familiar relation of reference, the primary relation between language and reality according to both camps. Siderits dismisses the Bhāṭṭa/Nyāya view as disregarding the context principle of sentence meaning (a word's meaning is determined by its role in a sentence) as radically as does the Bhartṛharian *sphoṭa-vāda* holism disregard the composition principle (sentence meaning is composed out of word meaning), such that according to the "words-plus-relation view" it is impossible to distinguish a veritable sentence from a word list.[28] While Nyāya does dispute the contention that a sentence refers to something over and above the referents of the individual words, there is a particular relatedness among the things denoted that is not designated by the individual semantic units. 'Bessie' nevertheless refers to our cow and in countless constructible sentences that bring out her relations to other things (or even identity to herself).[29]

Just what a word refers to is sometimes ambiguous not just apart from sentential context, as Gautama recognizes, but within it. Still, we know what the word means. We know that a speaker wants salt when S asks for it even though in Sanskrit the word used for salt, '*saindhava*', is a homonym with a word that means horse. S's intention to communicate p in such a case is crucial to disambiguation in that S speaks in a context (*prakaraṇa*).[30] Ordinarily, the overall context need not be taken into account, according to New Nyāya philosophers, to ascertain the meaning of a sentence, which has to meet only the three conditions of grammaticality, semantic fittingness, and proper presentation, the second of which we will discuss forthwith. But we do have to take into account the overall context—let us say "speaker's intention," *tātparya*—Gaṅgeśa and company admit and even stress, in some cases of ambiguity as also of figurative speech.

The following three necessary conditions for a meaningful statement are proposed and discussed not only in Nyāya but throughout the philosophical and grammatical literatures:[31]

(A) grammaticality, *ākāṅkṣā*
(B) semantic fittingness, *yogyatā*
(C) proper presentation (pronunciation and the like), *āsatti*

The first we have already discussed. On the Nyāya view, in brief, it accomplishes the unity of the sentence though it does not constitute that unity.[32] The words in a sentence have their *ākāṅkṣā*, (grammatical) "expectancy," mutually satisfied in the completion of a sentence as a string of words. The third condition I propose to ignore, though surely competence in proper representation is a requirement for communication. The second, the notion of semantic fittingness, is not well-known in the West, and I think it may be able to clear up some of the complexities of the *a priori* as inherited from early modern philosophy (a topic to be explored further at the end of the next chapter). In any case, *yogyatā* is connected to the Nyāya theory of figurative meaning, since although its violation is not necessary for triggering indirect meaning as comprehended by H, sometimes it is the trigger. The reason for this seems to be that we assume that a testifier is trying to say something intelligible, as in the Gricean conversational maxim.[33]

A stock negative example: "The gardener is watering the plants with fire" (*agninā siñcati*). Watering cannot be done with fire, and so the meanings of the words do not fit together except possibly figuratively. Some define "semantic fittingness" in a positive fashion, but it seems easy to find counterexamples.[34] Language has to be flexible so that we can report novelties. There may well be a white leopard. Furthermore, we understand something when we understand a false statement. Otherwise, again, we would not know where to look to determine its falsity, or truth, for that matter. Gaṅgeśa says explicitly that false statements as well as statements of doubt meet the requirement of semantic fittingness.[35] Even statements that are not just false but that we know are false can pass the semantic-fittingness test, as, for example (in a quip by Arindam Chakrabarti[36]) the positions of one's opponents! For these and other reasons, Gaṅgeśa, for one, defines *yogyatā* negatively as "absence of knowledge of a blocker (of testimonial knowledge)."[37] This shows a coherence tie. We cannot even understand testimony way out of whack with what we already know.[38]

Now normally, with veridical testimonial knowledge not involving figurative meaning where all three conditions are met, we do not notice the grammaticality, etc., of the transmitting sentence. These factors have to be present, but we do not have to be aware of them.[39] For figurative meaning, in contrast, we have to notice a blocker,[40] which paradigmatically may be thought of as a violation of *yogyatā*.[41] We know that no one waters plants with fire, for instance. Examples of less severe misfit occur, as we shall see in taking up now metaphor and indirect meaning. Violating *yogyatā* is not the only way to trigger a second power of words.

"FIGURATIVE MEANING," *LAKṢAṆĀ*

"Indirect indication" is one sense of the Sanskrit '*lakṣaṇā*', which is also the name of a second power of words beyond reference: "metonomy" or "figurative meaning." Nyāya admits just two *śakti*, "semantic powers," denying what aesthetes (*alaṅkāra-śāstrins*) call "suggestion," *dhvani*, as a third—a topic we'll take up briefly later. Reference, *abhidhā*, "denotation," is considered a direct, unmediated relation between word and thing, as pointed out. A word directly picks out a qualificandum as qualified by a qualifier. (Abstracting the qualifier gives us what we may call the word's sense.) Now the second power of words is also referential but indirectly so, mediated by a conceptual link to what S intends to communicate, *tātparya*. A standard example: "The cots are crying" where it is not the cots but the people in them who are crying, so a speaker is saying. The word 'cots' here means things that are not cots.

Clearly we know that cots do not cry, and so semantic fittingness is violated. However, in the case of "Bring in the sticks," which means "Bring in the wandering ascetics carrying walking sticks" and does not mean that just the walking sticks should be brought in, the sticks nevertheless could be brought in, and would be, normally, and so there is no semantic unfittingness in consideration of the words' direct denotation.[42] Furthermore, there is not an entire loss of meaning in that presumably the sticks would be brought along by the ascetics as they were ushered in. Unlike 'cots' in the previous example, there is retention of the original meaning while there is also meant something other than the denotation of the word. But even with 'cots' the word's original meaning (abstractly or in general) is the key to its figurative use, since it directs us in the right way, so to say, towards the people.

All figurative meaning involves what Sibajiban Bhattacharyya calls a chain relation, *param-parā*, minimally a two-place asymmetrical function, reference to an ultimately indicated, *lakṣya*, the beloved's face, for example, by way of an indicating reference, *śakya*, the moon.[43] In all cases, the ultimate meaning is indirect, mediated by a concept—paradigmatically, a universal as cognized, its *saṃskāra* or "trace" part of a person's memory bank—but also possibly by any of a whole slew of generalities, ideas of qualifiers through which we cognize all the many things we are capable of talking about. Figurative speech depends on words having a primary denotative power in a general, repeatable form. As with the operation of analogy as a knowledge source, the meaning of the indicator word in figurative speech may be said to trade on a word's sense.

This view is traceable all the way back to Gautama and the *NyS*, where the theory on the table is that words mean first and foremost individuals, like 'Bessie' as the name of a cow. Gautama offers examples of words meant in a figurative and indirect sense to refute such a nominalist view of word meaning.[44] Thereby he gives one of the earliest lists of relations implicated in figurative speech, association, location, purpose, and so on.[45] Gautama's point, however, is that if words were exclusively names of individuals, figurative speech would be impossible, since no matter how rich one's ontology (admitting, for example, abstract individuals such as cowhood as what is named by 'cow'), in figurative speech the normal referent is not what is meant, not the moon itself, for example, but rather the face of the beloved being rhapsodized.

Among New Nyāya philosophers, it is, as mentioned, not just violation of semantic fittingness (*yogyatā*) that sparks a hearer to understand a word in a figurative sense. There are plenty of examples recognized of metaphors where the words make sense taking them strictly in their denotative meaning. Now it is words that have two "powers" of meaning (*śakti*), not sentences, but the second power of figurative meaning presupposes at a minimum a sentential context. Words' power or potency of figurative meaning is activated only in use. The traditional view, from which Gaṅgeśa demurs but only because of a need for qualification, is that *anvaya* must be impossible, which is the overall semantic and grammatical "connectedness" of meaning achieved by a sentence over and above the meanings of the constituent words.[46]

For example, the word 'Gaṅgā' in the locative case (in Sanskrit) conveying the sense of being on or in the midst of the river cannot be construed denotatively as used in "The village is in the Gaṅgā," since we know that no village is actually in the water. This is about the same as violation of semantic fittingness, and is also incapable of handling what is called *ajahal-lakṣaṇā* (metaphor where the original sense of the indicator word is not abandoned), where the sticks, e.g., not only could be brought, "Bring in the sticks," but would be brought, too, as we discussed. (Perhaps a better example: "The umbrella-bearers are passing" where it is meant that the people being shaded by umbrellas borne by others as well as the bearers themselves are passing.) Here it seems we have to talk about H's knowledge of what S intends, which H grasps from the context (*prakaraṇa*), or at least admit that context is sometimes crucial for the precise sense of a word. For example, by context we know that the verb "bring in" in this instance means "usher in politely" such that there would be a violation of the possible relatedness of the words denotatively since you do not *usher* in sticks.[47] Annaṃbhaṭṭa (seventeenth century) argues that such examples along with words with more than one sense (such as '*saindhava*', "salt" and "horse") demand that the theory of the trigger for figurative speech as the impossibility of *anvaya*, connectedness, be jettisoned in favor of the view that it is the impossibility of the speaker's intention, *tātparya*, that triggers testimonial knowledge in cases where the communicating sentence contains a word used figuratively.[48]

We shall move on just a bit below to examine New Nyāya's notion of *tātparya*, "(speaker's) intention," and return to a topic closely related to figurative meaning at the end of the next section, *dhvani* or *vyañjanā*, a proposed third power of words not accepted by Nyāya philosophers, "suggestion." It turns out that determination of speaker's intention is crucial to Nyāya's dismissal of suggestion as an additional word *śakti*. As we shall see, putative instances are explained as the working of inference and/or testimony analyzed just in terms of the two powers of meaning. It is appropriate now, however, to consider one more subtopic regarding figurative meaning, which looms large in the late philosophy of language of the "aesthetes" (*alaṅkāra-śāstrins*) as well as with luminaries in Vedānta and not just in Nyāya and Mīmāṃsā.

Recall the division of types of word according to whether the reference is only by convention (*rūḍhi*, "stipulation"), only by derivation (*yoga*, "[etymological] synthesis"), or by a combination of both (*yoga-rūḍhi*), which we discussed in the previous chapter (p. 76). Lots of expressions are what we call in English "dead metaphors." In Sanskrit, a stock example (which is a little humorous) is the word '*maṇḍapa*' (or '*maṇḍa-pa*', the dash showing that the word is a compound). By convention the word means an ascetic and by derivation (combining the sense "alcoholic scum of boiled grain," *maṇḍa*, with "drinking," -*pa*, thus) "scum-drinker." At one time the term may have been used in a figurative sense for an ascetic (maybe even literally), but convention trumps etymology, Nyāya philosophers argue, and now the word is used to mean an ascetic denotatively, Gaṅgeśa reports, without a derogatory sense.[49] Its second power could be elicited, but it itself is a dead metaphor (or "faded metaphor," *nirūḍha-lakṣaṇā*, in the rendering of Kunjunni Raja[50]), which could be re-enlivened but only by some cue, some indication that S has not spoken using words only with direct reference.

SPEAKER'S INTENTION

Nyāya breaks with Mīmāṃsā over the nature of Vedic authority. The Nyāya position is that, like all sentences, those of the Veda should be understood as spoken (or composed, etc.) by someone with an intention to communicate. The Mīmāṃsā view is that the words of the Veda are not spoken by anyone originally (that speakers are subject to error would undermine Vedic authority seems to be the idea). The verses are instead simply chanted afresh by each new generation of memorizers. Now Nyāya philosophers are theists, with the possible exception of Gautama, the *sūtra-kāra*, and the later writers show more or less enthusiasm for Nyāya's, let us say, minimalist theology. To be sure, the mainstream position from Vātsyāyana on is that God (the Lord, *īśvara*) is the author of the Veda, but this is not a

very central tenet. Theistic ideas, apart from Udayana's treatise devoted to proofs of God's existence, get, all told, small play in Nyāya literature. Nevertheless, it bears repeating, that God is the author of the Veda is the mainstream opinion. Mīmāṃsā, in contrast, is atheistic, viewing the Veda as primordial, and heard, memorized, and passed down from generation to generation immemorially.[51] It has no author, no beginning. And it is at the center of the rituals and sacrifices that Mīmāṃsā takes itself to defend, rituals that have themselves been practiced immemorially. My point is that Mīmāṃsā comes to the debate about speaker's intention with an axe to grind: sentences can be meaningful without having a speaker with an intention to communicate. Nyāya generalizes from the everyday to assume that, no, statements and sentences require a speaker, a composer, who in the case of S's knowledge passing to H, must be an *āpta*, i.e., someone who knows the truth and wants to tell it without deception.

However, we have to be able to understand a spoken sentence to be able to determine a speaker's intention, *tātparya*, which we infer from what is said supplemented sometimes by contextual cues. Thus knowing the intention is not an invariable antecedent of testimonial knowledge, says Gaṅgeśa who is followed here by Annaṃbhaṭṭa and other New Naiyāyikas.[52] Understanding S's intention is not a fourth condition on a statement's meaningfulness from the perspective of H—except in some cases of ambiguity and figurative speech. But in those cases it is indeed crucial, and there is no way to get around the need to make it out in order to fix the meaning, which cannot be gathered at, so to say, a first pass.

But on a second pass, we are able to gather not only indirect meaning but also more information through inference. In this way, Annaṃbhaṭṭa would explain what others see as the results of the activation of an alleged third power of words, namely, *dhvani*, also called *vyañjanā*, "suggestion."[53] In other words, if a sentence contains an ambiguous word or figurative meaning, there may well be no way to tell what it means without considering S's intention.[54] Now advocates of the third power analyze the stock example of the village said to be in the Gaṅgā as *suggesting* that the village has a meditative atmosphere by association with the sacred river. The whole point, they argue, of poetic use of figurative speech is to release the third power of suggestion. Why otherwise not simply say that the village is on the bank? The speaker uses the figurative speech to suggest the attributes of coolness and purity. Annaṃbhaṭṭa responds that if one understands from the statement these attributes then the figurative meaning (*lakṣaṇā*) of "in the Gaṅgā" is not just being on the bank of the river but on a bank that lends coolness and inspires meditation and clean living. This is then just a more complex case of *lakṣaṇā*, indicating a cool and purifying location on the indicated bank (*lakṣya*).

There is a different kind of putative suggestion that its advocates (in the so-called *dhvani* school of *alaṅkāra-śāstra*) say is not sparked through figurative usage. A complex example of this type is indeed cited by the founder

of the *dhvani* school, Ānandavārdhana, to establish the existence of the third power of speech near the beginning of his *magnum opus*.[55] But let us look at a simpler but similar example provided by Annaṃbhaṭṭa's commentator Nīlakaṇṭha of a verse spoken by a loving wife to her husband upon his imminent departure (slightly modifying Gopinath Bhattacharya's translation): "Go, go, if thou must, my beloved. May thy paths be happy. And may I be born again just where thou hast gone."[56] Nīlakaṇṭha says that the suggested meaning is that the husband should not leave ("Beloved, my life will be over if you depart. So please don't go"). There is, however, no word used figuratively to generate this meaning. There is a violation of speaker's intention assuming that the wife does not really want to be reborn at the distant place. But there is no word used figuratively that could generate the suggested sense. Annaṃbhaṭṭa handles the case by claiming that we, and the husband, do not grasp the meaning at first pass. He gets it, however, on a second pass from inference. He reasons that the wife would not have mentioned rebirth to be near him had she not wanted him not to go. However, Nīlakaṇṭha apparently has sympathy, as Professor Bhattacharya points out, for the position that there is operative here a third power of words: "It is to be noted, however, that if people actually feel, in an instance like the present one, that they do have an immediate cognition of the suggested sense without the intervention of any inferential relation, then it would be impossible even for the preceptor of the gods to repudiate it."[57]

Personally, I must say I share Nīlakaṇṭha's sympathies. There is, after all, a significant bulk of literature, on the side of both poets and critics, in which *dhvani* is aimed at or is the principal analytic tool. It seems petty for Nyāya philosophers to try to reduce what many—and many great minds, such as Abhinava Gupta, Viśvanātha, Jagannātha, the list is long and distinguished—see as the purpose both of poetry with its figurative speech and of criticism. More precisely, the dominant view is that suggestion is the means to aesthetic experience, *rasa*, which is the goal, or soul (*ātman*), as Ānandavardhana says, of poetry.[58] It is the critic's business to reveal the *dhvani* and help the reader/hearer grasp it so to share the poetic emotion. Perhaps down deep the Nyāya attitude is that the result is not often testimonial knowledge. But Annaṃbhaṭṭa may be taken to speak for the school when he admits there is knowledge, first testimonial knowledge and then inferential, that seems to trade on a suggestive sense. Nevertheless, he would explain it away as a function of inference and words' power of indirect indication, as we have seen.

7 Lessons for Analytic Epistemology

The number-one lesson from our study for contemporary epistemology should be rather obvious: classical Indian philosophy includes a rich tradition of thinking about knowledge, which Nyāya represents in its own realist and common-sense fashion. Hopefully soon Nyāya, Mīmāṃsā-Vedānta, and Buddhist Yogācāra will take their rightful places as epistemological resources for students of philosophy. A sign of this will be integration of the study of the classical Indian schools more broadly into graduate Philosophy curricula maybe not wherever analytic philosophy is taught but in many places. There is enough in common between the traditions that it is easy to see how in principle bringing to bear Nyāya's views and arguments on issues of analytic epistemology could well bear fruit.

I should like to spend the rest of this chapter on specific lessons connected to strengths and weaknesses of the Nyāya position as I see them. Let us start with a common and basic objection to externalism, the so-called causal fallacy, in a version due to Keith Lehrer, who claims that externalists mistake causes of beliefs for reasons.[1] Raco, as imagined by Lehrer, is a racist who initially comes to believe that *p* (that Raco's disliked racial group is more susceptible to some particular disease than is Raco's own grouping) because of his racism which not only generates his belief that *p* but implants it with absolute and unshakeable conviction. Later Raco becomes a doctor and scientist and familiar with real evidence that *p*. Thus, according to Lehrer, Raco is justified in believing that *p* having reasons that are entirely distinct from the cause of his belief. Personally, I am surprised at the sway of the case, since it seems easy to dismiss as a problem, at least for Nyāya. Causes, or citings of causes, become reasons, not invariably good ones, when we step back and wonder whether a belief is true. Animals and children have knowledge without reasons, not reasons at least that they are aware of as reasons, as do we all, according to Nyāya. To stretch the meaning of "reason" to include motivations for animal acts such that there would be animal reasons, the point would remain that we have unreflective knowledge where we are not aware of the reasons for our beliefs as reasons that we could cite. The giving of reasons belongs to reflective knowledge, where we see causes as reasons. My wife is self-consciously

justified in believing that my glasses are in the kitchen if, challenged by me, she cites the cause of her belief as her perception, "I am staring at them." Raco, by Nyāya's lights, does not know that *p* because his belief that *p* is not *pramāṇa*-born, and it seems to me to be a strength of the Nyāya analysis that even though Raco can give good and decisive reasons for believing that *p*, reasons that he does in fact believe, intuitively we say he does not know. His belief that *p* is not sensitive to the fact that *p* (it does not "track the truth," to use Robert Nozick's test) in that he would still believe that *p* even if *p* were false and the scientific evidence pointed to ~*p*. Thus this is shown to be a great case to reveal, by suppositional reasoning (*tarka*), that the having of good reasons is not sufficient for the kind of justification needed for knowledge. Dr. Raco does not know, because his belief has not been generated in the right way. It is not objectively justified. If he transcended his racism and came to believe *p* on the basis of scientific evidence, then we would say that formerly, as having a belief forged by racism, he did not know that *p* whereas later, in believing that *p* because of the evidence, he does indeed know.

Similar considerations take care of the "Truetemp" case due to David Armstrong and Keith Lehrer along with the case of the irrational clairvoyants Amanda and Bertha discussed as counterexamples to reliabilism and all externalist attempts to explain epistemic or subjective justification by Laurence BonJour.[2] A subject S who lives in New York is, unbeknownst to her, wired to a weather station in Sydney in such a way that on the hour it occurs to her that the temperature is such and such in Sydney and in fact she is always right. The belief-generating process is thoroughly reliable, in fact infallible, like Nyāya's knowledge sources, and involves a causal chain between the temperature in Sydney and S's belief. Our intuition is that this is not a case of knowledge, but it seems that according to the externalism of Nyāya it would be.

This line of thought fails, however, to take into account key theses in Nyāya's understanding of a knowledge source, in particular, that a source is a type of process that invariably generates true beliefs, not a one-time, unlawlike generating of a belief that *p* from the fact that *p*, and that the results of the several sources can be apperceptively identified as perceptual, inferential, and so on. Thus by Nyāya's lights too much about the True-temp case remains obscure. If, for example, there is to be a true-belief generator whose operation could be detected, then the subject would have knowledge. That is, if, say, S in New York needed to know what the temperature in Sydney was and certified her knowledge (perhaps by telephoning someone in Sydney) she presumably would come quite reasonably to her hourly readings. And she would have knowledge indeed. If, on the other hand, all that S is aware of is the *thought* that the temperature is such and such in Sydney—if she were only *entertaining* it, in Fregean fashion, akin to what Nyāya calls *āhārya-buddhi*, "fantasy, imagination," which is not considered a "presentational experience," *anubhava*—S could not,

by Nyāya's lights, be said to believe it. We can tell the difference, apperceptively, between perception and day-dreaming, and we don't trust the latter to guide us in action. Cognitions of fictions where it is known that the objects are not real are deemed *āhārya-buddhi*, "imagination" (see the chart, p. 29). A person does not act on the basis of imagination, except, perhaps, in a play. Trust is built on feedback, and it is relevant to what we do. Again, if S did come to trust her Sydney-temperature cognition—that is to say, if she really had *belief*—she would have knowledge, since we are imagining a discoverable knowledge source (S could discover the connection or be led to assume (rightly) that there is something like wiring connecting her brain to Sydney). According to Nyāya, all that is required for unreflective knowledge (*pramā*) is a lawful tie to the object cognized. (Nyāya's acceptance of analogy as a knowledge source shows particularly well that the school is open, in principle, to acceptance of sources beyond the traditional four, as I argued.) As in the case of perception, it would not matter whether the knowledge source, the generative process, had been discovered by S in fact. This is especially true of details of its functioning. We don't know precisely how sight works, all its mechanisms, so to say. But sight is a knowledge source, and we can recognize it. S could have reflective knowledge (*nirṇaya*) however here, too. What matters for reflective knowledge is that we understand a source's operation well enough to discern "excellences" and "deficiencies" (*guṇa* and *doṣa*) as we have discussed. Imaginably, this S could do.

These reflections should be sufficient to provide the direction for a response to other cases taken to challenge views similar to Nyāya's, for example the clairvoyants Amanda and Bertha who are dreamed up by Laurence BonJour expressly to fit reliabilist accounts of justification but who intuitively are irrational.[3] BonJour imagines that Amanda believes that p by clairvoyance although she has no evidence whatsoever that clairvoyance is reliable (we are to imagine that for reasons unknown to science it is 100% reliable, again like Nyāya's *pramāṇa*). Unlike Bertha, Amanda also has evidence that the faculty is unreliable (from client feedback, television reportage, etc.). Bertha has no evidence of either kind, positive or negative, about the reliability of her clairvoyance, whereas, again, Amanda lacks positive and has negative evidence. Clearly, Amanda should not believe the doxastic output of her clairvoyance, despite its reliability. Bertha, BonJour argues, shows the inadequacy of even the weaker externalism that would strengthen the requirements for justification beyond merely being the output of a reliable doxastic practice (*unqualified externalism*) to include S's not having reasons for thinking that p is false (there should be no known defeaters for p, a condition that Bertha meets), a view BonJour designates *qualified externalism*. In other words, Bertha lacks positive evidence for the reliability of her clairvoyance, but, unlike Amanda, also has no evidence that the beliefs it generates are false. Intuitively, Bertha, too, seems irrational since the reliability of her only source for her belief that p is not known to her (the terms of the thought experiment dictating that there is no other source for her belief).

Notice that BonJour stipulates that the clairvoyance's reliability "is not cognitively accessible to the believer in question." This means that, by Nyāya's lights, the belief that p could indeed not be certified. Thus, though true, it would fall easily to a challenge. There is a social dimension to knowledge. Amanda would be irrational and not have knowledge if she continued in her belief that p after being faced with negative evidence concerning the source of her conviction. And she would not have knowledge, even at the first level after the challenge, according to Nyāya. The case with Bertha is different. In hindsight after, let us imagine, our discovering the truth-guaranteeing nature of clairvoyance, we might say that she had unreflective knowledge (*pramā*) that p since, by the terms of the thought experiment, the belief faced no defeaters. No reflective knowledge (*nirṇaya*) would have been possible, admittedly, at the time for Bertha, as stipulated. But if *we* discovered that clairvoyance is a knowledge source, then I think that we would say that she had knowledge.

Before moving on to a different kind of objection to externalism, the so-called new evil-demon problem, let us look at two other well-known cases alleged to be obstacles to externalist accounts of knowledge and justification. Robert Nozick imagines a grandmother believing (that p) that her granddaughter is alive and well when she is standing in front her, in a case that intuitively we would call knowledge but that does not appear to meet Nozick's "tracking" standard: If p were not true, S would not believe that p. Belief that p, Nozick argues, has to be sensitive to the fact that p if someone has knowledge. It has to vary appropriately as we imagine possibilities where p is true or false. And here the grandmother's belief does not track the truth. This would be because, as Nozick imagines the case, that everyone but the grandmother knows that she has only weeks to live and no one would want to upset her by telling her that her granddaughter was not alive and well. If the granddaughter were not alive and well, the grandmother would belief it by way of the inevitable lies. Such cases force Nozick to "relativize to a method," as he says, such that the grandmother's knowledge would pass the revised test: If p were not true, S would not believe that *p by method M*.[4] Nozick then proceeds to talk a lot about "ways and methods" of knowledge. However, much of what he says is vague and general, not specifying wide-ranging knowledge sources. In any case, Nyāya handles Nozick's grandmother case as well as or arguably better than Nozick himself. The grandmother has knowledge by *perception* that the granddaughter is alive and well when she is standing in front of her. But the grandmother would not have *testimonial* knowledge that the granddaughter is alive and well even when she is since her putative source would not be veritable testimony as a *pramāṇa*. The testifiers would not be trustworthy when it comes to this matter (not *āpta*). They would deceive her if p were false.[5]

Consider, finally, the case of the tourist who perceives a real barn and forms the appropriate belief but who does not know that the barn is real because the countryside contains many papier-mâché barns that the subject would have mistaken for a real barn.[6] Seeing real barns which are interspersed with fake barns that he takes to be real, S has perceptions that are not knowledge-generators in that environment. When S says, expressing his perceptual belief, "Now that's a fine barn," not only is he right, we may imagine, but there seems to be absolutely nothing abnormal in the perceptual belief-generating process that leads him to say what he does. He's right and he appears to be justified, but intuitively we say he does not have knowledge. Furthermore, such cases do not involve a false premise or apparently any flaw in the belief-generating process and thus present a special challenge to Nyāya. The challenge is, I think, nonetheless answerable. Here I begin to go beyond the classical literature as well as our discussion in Chapter 1 of a Gettier case of a pseudo-inference to the true conclusion of fire on a mountain where there is indeed fire (discussed earlier, p. 13). That case involved a false perceptual premise, a mistaking of dust by the subject for smoke. Thus the fake-barn case, which does not involve a false premise, does, I repeat, present a special problem for Nyāya's analysis. Intuitively, there is no knowledge since S could easily have had a false belief with the same objecthood or intentionality, that is, had he looked at the countryside just a moment earlier or later than his lucky glance. The problem for Nyāya is that *p* ("Now that's a fine barn") appears to be "knowledge-source-generated."

However, there are resources in Nyāya to deny this, in (a) environmental conditions required for perception to be genuine and (b) the role assigned to memory in perceptual experience. Being in an environment where so many barns are fake could be identified as undermining the operation of perception with respect to barns and like constructions. It's a rule for sight (this is an often cited epistemic "deficiency") that a middle-sized object cannot be too far away from the perceiver if its height is to be perceived. So also, it would seem, for perception of Fs in an environment where so many F-looking things are not Fs.

Then, slightly changing *p* and the statement to "Now that's *another* fine barn," or "Now that's a fine barn (compared to others we have been seeing)," shows that there is a memory-related deficiency. Only a first-time perception of something as an F is free from the "whiff" of previous experiences of Fs, says Nyāya. A cognitive process misinformed by memory is not perception as a *pramāṇa*.

In sum, there are two identifiable deficiencies ruling out genuine perception in this and similar cases, one in the environment and another in the subject's memory. All this accords, moreover, with the "suppositional reasoning," *tarka*, a Nyāya philosopher is taught to take with such cases: that if S knew so many barns were fake he would not trust the "perceptual" evidence. The "method" as described from S's own point of view at the time he

is being deluded may that one time hit the truth, but there is no knowledge source in fact, no possibility of genuine certification, and no knowledge even at the first level since there is not the right relation to fact.[7]

Such a case as this one about fake barns does point up Nyāya's "generality problem," however. The Nyāya response, as I have imagined it, seems *ad hoc*, and Nyāya authors do not make up enough subrules for types of perception, etc. We discussed the generality problem in previous chapters, and I have little more to say now than to repeat that the difficultly is faced up to by Nyāya philosophers. Naiyāyikas specify a few rules, as pointed out, for subspecies of perception in particular according to the type of object known. Perhaps the best reply here is, again, that some certification conditions are very general (sense-organ/object connection, for instance) and we do not always need a lot of specificity. Nyāya philosophers tend to focus on the most general and easy to recognize. But also they clearly are not averse to proposals of specific rules targeting specific kinds of object, as pointed out.

To move on to the new evil-demon problem, nothing there embarrasses Nyāya, it seems to me, since in the evil-demon world there would be "pseudo-justification," *prāmāṇya-ābhāsa*, justification solely from a first-person point of view, not objective justification which entails truth (discussed earlier, pp. 13, 135n24, and 136n27). In a possible world where an evil demon is responsible for all of our experiences (except possibly self-perception) and where almost all of our beliefs are false, a subject may still be justified in her beliefs if she is a responsible believer, believing according to the evidence. However, by externalist accounts of justification—including Pollock's understanding of objective justification which entails truth—in the demon world there is no justification since factual ties are missing. Nyāya would say that indeed a responsible subject in the demon world would appear to be justified with a belief that could not be certified genuinely since it is false. There would be nevertheless a type of "apparent justification" according to Nyāya, and that there would be captures our intuitions, it seems to me. There's a big difference between being genuinely justified entailing that a belief in question is true and only appearing to be justified, although this is a point that demands an ability to appreciate an outside, not just a first-person, point of view.

In sum, the Nyāya analysis of knowledge and justification appears able to account for cases taken to be unexplainable satisfactorily by similar Western views. Perhaps when Nyāya is better known, other cases will be imagined that resist its analysis. However, I know of none. A weakness is that there are no formula in Nyāya to determine degrees of warrant in situations where we might like them. Another is that the question of how disagreement impacts justification is not entirely clear, the epistemology of conflicting reasons and evidence. However, Nyāya has developed rich resources in its theory of the subtle ways the scales of justification may be tipped by unfavorable or favorable *tarka*, "suppositional reasoning," the drawing out of untoward consequences, considerations of simplicity, and so on, as we discussed in Chapter 2 (pp. 30–32).[8]

Finally, I should like to take up briefly what seems to me the greatest deficiency of the Nyāya approach, which concerns *a priori* knowledge, for some types of which Nyāya simply comes up blank. The *a priori* is not a Nyāya category, as we have discussed (the closest equivalent in classical Indian philosophy being probably the later Buddhist concept of "internal pervasion," *antar-vyāpti*, p. 163). We have mathematical and logical knowledge which Nyāya's sources seem incapable of generating and possibly some other types of knowledge *a priori* as well.

The reason for the lack may be as simple as Nyāya philosophers' not countenancing knowledge *de dicto* but only knowledge *de re*, although arithmetic was well-known and the mathematics employed in astrological calculations quite sophisticated.[9] For Nyāya, knowledge is always of intersubjective objects, even when these are supervenient, mind-imposed properties (*upādhi*), or internal objects, such as desires and emotions which, consonant with its realism, Nyāya views as by others also knowable, "Chaitra is angry," for instance. On the other hand, the ontology of numbers is an important topic addressed in early Vaiśeṣika literature, and late Naiyāyikas led by Raghunātha (sixteenth century) make number a separate category. The relation (*paryāpti*) whereby it qualifies a property-bearer or bearers (which can be other properties, such as colors, as well as substances) is distinct from inherence, in that numbers qualify collections as wholes whereas properties that inhere in a group of things qualify distributively (five mangos are not each qualified by the number five but each individual mango has sweetness).[10] However, counting is the only matter of arithmetic treated epistemologically that I am aware of, and quite amazingly it is viewed empirically, as a matter of experience, in that an nth number is considered a mind-imposed result (*upādhi*) that is dependent upon a preceding cognition apperceived (i.e., known by internal perception) which informs the latter by its having n-1 as its qualifier portion or predication content (*viśeṣaṇa*), back through a chain of cognitions, each informing its successor, to the initial cognition in the series that grasps something as possessing the number one. Other types of *a priori* knowledge would also be parsed differently from Western ways.

Quassim Cassam, rehearsing a disagreement between Tyler Burge and Alvin Goldman over how to define the *a priori*, writes: "These considerations suggest that what it is and is not acceptable to count as an *a priori* warrant is partly a matter of tradition."[11] Taking an overview of Nyāya underscores the point. By Cassam's lights, Nyāya's inferential knowledge and justification (warrant) count as *a priori* since they are non-perceptual although in the West what he calls memory warrant and introspective warrant are, he says, non-perceptual but not usually recognized as *a priori*.[12] Reasoning to the conclusion that nothing that is red all over could be at the same time green all over would not be judged knowledge by Nyāya, since "Nothing that is red all over could be green all over at the same time" would not express a presentational experience, *anubhava*, but would be a

matter of knowing the meaning of words. "The flag that is entirely green now is red-all-over" violates semantic fittingness, *yogyatā*, one of three conditions identified for sentential meaning (pp. 90–91). If we know the meaning of 'red', 'green', 'all over', etc., we are able to recognize a violation of semantic fittingness, though I should think Nyāya philosophers would laugh at the idea that by reflecting carefully about what it is to be red all over we arrive at the *knowledge* that something that is red all over is not green all over. It's hard to imagine a *pakṣa*, a veritable subject for the inference, since that requires our having an interest in whether it possesses the probandum property.

There are nevertheless "negative-only" inferences that, as we have seen, though quite abstract and philosophic in nature, are thought to generate important, factual conclusions. And such inferential knowledge is not a matter simply of knowing the meaning of words. Knowledge of meanings may be primarily a matter of testimony supplemented by analogy, but when it comes to categorial slices and definitions of fundamental types of thing, negative-only inference, which seems a lot like *a priori* reflection as touted in the West, is employed, as we discussed, which would generate new knowledge. Perhaps the most interesting feature of this kind of reasoning in Nyāya is that what is produced is by its lights not knowledge of ideas but of facts.

The division between conceptual and factual knowledge in not sharp in Nyāya. Meaning is thought of as reference, even word meaning, although in their own way Nyāya philosophers also recognize sense (pp. 78–80 and 87). There is no problem about perception being the way a subject comes to know that there is no sprinkling with fire and that the sentence, "The gardener is sprinkling the plants with fire," is either meaningless as violating *yogyatā* or an instance of indirect, figurative speech. Nyāya's thorough commitment to realism motivates its extreme empiricism which finds only perception as a direct link to the world of mind-independent objects, with, it bears repeating, the other sources as dependent on perception in some way. Veridical memory, in turn, is dependent on occurrent knowledge from perception or another source, and so memory warrant—as also introspection, i.e., apperception with Nyāya—is not strictly, *pace* Burge, Cassam, and others, non-perceptual. Nyāya is in principle not opposed to the admission of another source, as I have many times stressed. But admission of a fundamental tie to the world other than perception would violate the spirit of the school. Of course, inference, analogy, and testimony are processes that are different from perception albeit they are informed by it. Thus it is no mystery how justification that is "non-perceptual" (*a priori* in that sense) can be justification for a belief about a worldly thing.

Appendix

The Analogy Chapter of Gaṅgeśa's "(Wish-Fulfilling) Jewel of Reflection on the Truth (about Epistemology)" *Tattva-cintā-maṇi*

INTRODUCTION

Gaṅgeśa (Nyāya, fourteenth century, Mithila) uses a dialogic structure for the *Tattva-cintā-maṇi* (*TCM*), his masterpiece of epistemology, although except rarely he does not provide his interlocutors' names. He does so in only two places in this short chapter, on analogy (*upamāna*), which is the third of four chapters, each devoted to examination of a "knowledge source," *pramāṇa*: perception, inference, analogy, and testimony in that order. Gaṅgeśa's dialogic style has been addressed by me in several places, but it is worth again saying a few words—especially about the nature of philosophic *pūrva-pakṣa*, the prior or *prima facie* position or an objection, in relation to an author's own views, the *siddhānta*, the final, established position which answers the *pūrva-pakṣa*. Readers have to be acutely mindful of this textual division including *pūrva-pakṣa* within *pūrva-pakṣa* and sometimes another level down. Without appreciating the dialogical structure of Gaṅgeśa's text, no one could understand more than a few isolated sentences.

A *pūrva-pakṣa* is topically unified exposition, complete with supporting arguments, of an opposed position or of an attack relative to a *siddhānta*, which is itself unified exposition of an accepted position, complete with supporting arguments and/or correlate responses. Gaṅgeśa probably expected his immediate audience to be able to identify proponents and practically hear the voices of individual advocates. I use emboldened labelling to bring out the players in the dialogue, sometimes no more specific than a nondescript "**Opponent**" versus "**Gaṅgeśa**" expressing his own view, or an objector to a first or principal objector, labelled then "**Opponent.2**" versus "**Opponent.1**." With the emboldening of Gaṅgeśa's own name, however, probably I am a little over-bold, slightly distorting the text. Let me explain.

Throughout the *TCM*, Gaṅgeśa uses expressions such as *mama tu*, "My view, in contrast," as discourse markers, a practice that may be generalized, attributing *siddhānta* sections to Gaṅgeśa himself. But such ascription does not suggest as much as it should. A *siddhānta* is normally more than Gaṅgeśa's own view; it is supposed to be the view of Nyāya tradition, a view that Gaṅgeśa is interpreting as well as asserting anew (*atra brūmaḥ*

also occurs as a discourse marker: "To this, *we* respond"). Furthermore, a *siddhānta* indicator is not meant to introduce a perspective or way things might be, but a view arrived at by careful considerations and asserted as true. It is reflective knowledge, *nirṇaya*. The propositions that comprise a *siddhānta* are asserted both as true and as definitive of Nyāya even when they are original. The emboldened labelling of Gaṅgeśa's name is, then, best understood as signaling text where Gaṅgeśa gives his own views while taking himself to speak for the school. To be sure, rival Naiyāyika positions are sometimes aired, and often he distinguishes his contemporary or "New" (*navya*) Nyāya from that of "Old" Nyāya, as he does in one place in this chapter, even mentioning one philosopher of Old Nyāya by name (Jayanta Bhaṭṭa). Nevertheless, *siddhānta*s are asserted as expressing the positions of a school, not only of an individual philosopher.

The Prābhākara Mīmāṃsaka is the principal opponent here, as the commentators tell us, and throughout the *TCM*, although many other positions are taken up. In my opinion, the *pūrva-pakṣin* interlocutor would be better thought of as a Naiyāyika with Prābhākara leanings, but I defer to tradition. Note that he begins by stating the principle that the truth of everyday patterns of speech (*vyavahāra*) is to be accepted unless there are defeaters. In other words, he says that the cognitive default is acceptance and that the burden of proof is on those who would deny. This is the position not only of the Prābhākara, but of Nyāya and practically the whole of classical Indian philosophy.

The text is taken from the Gaurinath Sastri's edition of the analogy chapter of the *Tattva-cintā-maṇi* with the *Pragalbhī* commentary by Pragalbhācārya (Varanasi 1983). There is also an older Calcutta Asiatic Society edition (1990 reprint), edited by Kamakhanath Tarkavagish, with the *Dīpanī* commentary by Kṛṣṇakānta Vidyāvāgīśa. No attempt has been made to edit the text critically or systematically to compare the two published editions. But in a few places I have followed a clearly preferable phrase of the Calcutta edition, marking the fact in a note. Both Sanskrit commentaries have proved helpful, particularly Kṛṣṇakānta's. Typically ellipses have been supplied following his lead (*iti śeṣaḥ*), although at places Pragalbha's commentary has also proved absolutely crucial for me.

Chapter 5 in this book may serve as an introduction to the concepts employed by Gaṅgeśa here. Let me add only that it is fortunate for us, or at least for me as a translator, that the semantics, or grammar in a broad sense, of 'similarity' in English is such that it is easy to map the grammar of the word '*sādṛśya*' in Sanskrit. This is particularly evident in the points made about "conventional usage" (below, Gaṅgeśa's response to the New Prābhākaras, p. 115, for instance).

gaṅgeśopādhyāya-viracitas tattva-cintā-manau upamāna-khaṇḍaḥ

From the *Tattva-cintā-maṇi* "(Wish-Fulfilling) Jewel of Reflection on the Truth (about Epistemology)" The Analogy Chapter

By Gaṅgeśa

[Text: p. 1, Varanasi, and p. 1, Calcutta]

Gaṅgeśa: Now analogy is explained. Here some say that analogy is the source of knowledge of similarity.

Opponent.1 (a **Prābhākara Mīmāṃsaka**): Similarity is another category (over and above those recognized by Nyāya and Vaiśeṣika). More specifically, similarity is (a distinct category) because everyday speech about it is undefeated. And this is not a single thing throughout the categories since that supposition entails the unfortunate consequences that everything would be similar to everything else and everyday speech about things as a lot or a little similar would be impossible (or inappropriate) were it a unity.

[Text: p. 2, Varanasi, and p. 8, Calcutta]

Opponent.2 (against the Prābhākara): Thought like that (a little or a lot of similarity between two things) occurs through a little or a lot of common characteristics collected such that they make manifest the similarity.

Prābhākara: That should not be said. We do not find the short and the long (the abundant and the slight) in the case of something like a pot that is being made manifest abundantly (by being right in front of our noses) or slightly (by being a long way off). Furthermore, the concept of the manifester (*vyañjaka*) is sufficient to account for the practice in everyday speech (to talk of a little or a lot of similarity) since nothing additional has been identified. Nor is similarity a single thing that, like conjunction, exists depending on relata being related (there is no conjunction without the things conjoined). For this idea faces the unfortunate consequence that we would have to say of the (well-known but absent) cow, as we do say of the (recently encountered and present) *gavaya* buffalo, that it is very similar (to a cow) given that the substratum of the similarity is indicated (*upalakṣita*)

by cowhood. And if there is (at the time) no sensory relation to a cow, then there would be the difficulty that, like conjunction (which is imperceptible when one of its relata is imperceptible, as with an earth atom in contact with a pot—both relata have to be perceptible for their conjunction to be perceived), the similarity would be imperceptible (whereas the cow-similarity in the *gavaya* can be perceived). Or, if the similarity is to be perceptible, then the difficulty is that insofar as the (cow-)similarity specified as in the *gavaya* buffalo is to be known (as indeed it is known) by a single cognition, the cow portion would have to be visible to the eye (whereas in the case at hand there is no cow but only a cow-resembling buffalo).

[Text: p. 3, Varanasi, and p. 11, Calcutta]

And contrary to what some suggest, similarity is something different in each of its locales.

Opponent.2: Because each and every thing would deviate and because there would be no uniformity, there would be in that case no uniform concept. Furthermore, there would not be the grammar we know for the word 'similarity'.

Prābhākara: That should not be said. For the two (similarity as a uniform concept and the grammar of the word) are possible (on several views): because there is a similarity universal to be known by a cognition of its recurrent form, or because it is something over and above the seven (recognized) categories, or because like a natural kind (*jāti*) or an ultimate atom it is a *sui generis* particular (*sva-lakṣaṇa*).

And it (similarity) is not a substance nor a quality nor an action, because it occurs in qualities and actions.

Moreover, everyday speech on the score does not flow just from (cognition of) the similarity's substrata, since the idea of it is formed even when the substrata are dissimilar.[1] Just for this reason, there is the idea albeit you do not fail to know that there is no relation of similarity between the substrata. For there is no prevailing counterconsideration (to this thesis) and in general such dissimilarity is possible.

And it (similarity) is also not a universal (*sāmānya*). For (unlike a universal) it is not a single thing in all its instances, since that is not accepted (by either of us) and it would make the everyday practice of speaking of a lot and a little similarity impossible.[2]

[Text: p. 4, Varanasi, and p. 15, Calcutta]

Objection (by a **Bhāṭṭa Mīmāṃsaka** to the Prābhākara): Similarity is (D^1) an abundance of common characteristics (not as an independent category but) in terms of parts, qualities, and actions, given that there is difference (between the things that are similar).[3]

Just for this reason, such an idea of similarity does not arise if the countercorrelate (the cow or whatever it is to which there is a purported similarity) is distant (i.e., does not have much in common with the *gavaya* buffalo or whatever) since there would be no cognition of an abundance of common characteristics (*bhūyaḥ-sāmānya*). For example, with a forest and a palace the cognition and usage would be that there is minimum similarity since the abundance, that is to say, the collection (of common characteristics), is slim. Otherwise, we would have to hold that such a thing as a forest (or tree plantation which is made up of individual trees) is also something over and above (the trees). The everyday practice of speaking of a lot and a little similarity is explained by there being a lot or a little in common.

Thus it is said: Just many commonalities among qualities, parts, and actions is similarity said to be, similarity that is evident through commonalities belonging to distinct material causes.

Prābhākara: Wrong. As with a pair of lotuses (which are similar in terms of their qualities but not in terms of their parts), the idea of similarity can arise, too (i.e., your definition is too narrow) with respect to qualities and kinds when there are things of the same kind without there being parts etc. of the same kind. And (on your view) similarity would exist in a donkey and an elephant calf which are dissimilar (i.e., your definition is too broad).

[Text: p. 4, Varanasi, and p. 18, Calcutta]

Nor is it (D^2) an abundance of properties existing in one thing with respect to the properties of something else. Nor is it (D^3) the possession of properties that are abundant with respect to those had by x (the countercorrelate, the cow) given that the things (are not identical, that is) do not have the same uniquely specifying properties (*asādhāraṇa-dharma*). Nor is it (D^4) the possession of properties that are abundant with respect to those had by the absentee (*pratiyogin*) of an absolute absence that rests in the thing itself (the thing y perceived to be similar to x the *pratiyogin*). (These definitions are no good for the same reason, for the reason that) there is no uniformity about (what counts as) an abundance, since three, four, five, etc. (common characteristics) are each a different idea.

And it is not the case that, like the "plural" (which is taken to mean at least three), a triad is sufficient, since this would land us in the predicament that even two dissimilar things such as an elephant and a mosquito would be similar.

Thus it has been said:[4] In this way, variegatedness (*citratā*) applies to something because of differences among groups of commonalities, singular pairs, triads (and so on), propertywise (that is to say) with respect to kinds, qualities, substances, actions, and powers (or capacities).

[Text: p. 5, Varanasi, and p. 19, Calcutta]

Objection: Similarity is an abundance of properties with respect to those had by x (the countercorrelate, e.g., the cow) relative to the exclusionary, determinant properties (of y, the thing perceived to be similar to x). And an "abundance" is (to be taken as) uniform through three,

four, and so on (commonalities). In the case of an elephant and a mosquito, in contrast, much is excluded, while what is common is slight. Just for this reason, similarity is said to be something implying there is just a little difference (from something else).

Prābhākara: No. The everyday practice is to talk of similarity (in some cases) where the number of exclusionary properties are (for two similar things) the same, or a few, or an uncountable number.

Furthermore, common characteristics (i.e., universals, *sāmānya*) are undivided through differences in their substrata (cowhood, for example, is the same in all cows), whereas similarity is distinct, divided. A common characteristic (or universal) does not have a countercorrelate, and by that it is not made determinant to us. Similarity, in contrast, does have a countercorrelate, and it is made knowable with reference to a countercorrelate.

[Text: p. 6, Varanasi, and p. 21, Calcutta]

Objection: Similarity is (D^5) the possession of common characteristics in the abundance had by x (the countercorrelate, e.g., the cow), given that x and y (the correlate, the buffalo) are distinct.

And distinctness (*bheda*) is (to be defined as) something else for each of its substrata (all the many distinct things), and it does have a countercorrelate (thus accounting for the relational character of similarity).

Prābhākara: If this is what you hold, then since similarity in its distinctness factor would have definite boundaries (*sāvadhi*, like a pot distinct from a cloth) there would be the locution "Similar *from* that" but not (what we have in fact) "Similar *with* that" or "Similar *to* that."

Objection: In that similarity has a countercorrelate, the usage "Similar *from* that" is okay.

Prābhākara: Also wrong. For if similarity has definite boundaries, then conception and usage should conform. But they do not with respect to the countercorrelate (which is then different with similarity as opposed to what it is with distinctness). Even if there were none (no similarity), "(Similar) *from* a pot," could be conceived—this is the unfortunate consequence.

Furthermore, if similarity were a possession of x's properties, then there would be chaos concerning just what is distinct from what. For the possession of the properties of x is to be x.

And to have whatever ("to have that," *tadvattā*, to have whatever characteristic) is to be other than the whatever had. Moreover, if "to have whatever" were applicable to that (the "haver," the possessor of whatever characteristic), then "that itself" (*tad eva*) would be the equivalent of "having that" (*tadvat*). (This is the absurdity.)

And likewise there would be (cognition of similarity expressed as), "This *is* that," as we have in the case of a recognition (of something or someone) by its having certain properties ("This is that Devadatta"), but not (what is actually the case with similarity), "This *has* that."

For given that the having of that would be in this way equivalent to the being of that, the idea and designation of a cow would be applicable, too, to the *gavaya* buffalo, since, like the cow, it would be a substratum of the "being that" (*tattā*) that rightly captures the characteristics (*sāmānya*) it has in common with cows.

Nor is similarity the same as the individualizer (as a category), since (unlike individualizers) similarity can be perceived. Nor is it inherence (the further category), since it exists in a way over and above the way inherence nests (in its relata).

Opponent.2 (presumably a Naiyāyika): Whether similarity is a presence or an absence, whether as a presence it also has its own attributes or is attributeless, and if attributeless then also whether supervenient or non-supervenient, and if supervenient then also whether it has a common characteristic or has none, and if it has, then also whether it is evident or not evident, and if as attributeless, without a common characteristic and yet supervenient, whether it supervenes on a single thing or on many—such are the questions that lead us to include it within the seven (established) categories.

Prābhākara: That's wrong. (Without similarity as a separate category) the ways we speak (about similarity) would be impossible since they fall outside those (other categories and the ways we speak about them). Otherwise, since on this conception *inherence*, *individualizer*, *universal* would share the properties of the (other) triad (of categories) *substance* and the rest, they would be included in them.

[Text: p. 7, Varanasi, and p. 24, Calcutta]

Gaṅgeśa: We answer. Similarity to y is the possession of an abundance of properties had by y, properties that are other than those that uniquely specify x (and determine what it is). And what natural kinds and so on are common (to the two similar things, x and y), those are (like all universals, all natural kinds, *jāti*), without definite boundaries—to consider the factor that does not pertain to the difference between x and y.

(So) similarity is (D^6) the possession of an abundance of properties had by y. Through such an abundance similarity is to be made known. Thus similarity only as to be made known by that (possession of an abundance of properties) is such that it has countercorrelate structure.

For you, too, just this is what its having a countercorrelate amounts to, not to its having definite boundaries as with the distinctness between two things, being long or tall, etc., since that idea has the unfortunate consequence of making us expect the thought, "(This is similar) *from* that" (as opposed to "*with*" or "*to* that" which is what actually occurs).

Furthermore, such an abundance is not non-uniform (as was alleged) through sets of three, four, and so on common characteristics.

Nor does the definition extend too far, since even in the case of an elephant and a mosquito there is similarity in both being living things, enjoyers of pleasure, subjects of pain, and so on.

Just for this reason, a little and a lot of similarity are accounted for by something's having the properties of something else abundantly or slightly. For example, even given (great) dissimilarity we say "Her face is like the moon" because of the (common) generating of joy, etc., and because of (common) domestication we say "A water buffalo is like a cow."

Just for this reason, the person (the forester in the stock example) questioned (by a subject who is to acquire knowledge by analogy) spells out the cow-similarity in a *gavaya* in spelling out just the properties that it has that the cow has, too (which are many). "Cows resemble a boar" (is an example where the common characteristics are few but) thus here in the case of the boar, too, there is (a little) cow-similarity.

The common ways of speech in poetry and literature concerning analogy and that which is known by analogy proceed by way of one thing's having the properties of something else (being made known).

(And) just by having the prover and probandum properties (together), the inferential example (e.g., a kitchen hearth where smokiness and fieriness are known to be together in the case of an inference from a smoky mountain to a fiery one) is mentioned by logicians (and reasoners) in statements that indicate the similarity to the inferential subject (e.g., of the kitchen hearth to the mountain, which is the inferential subject, the *pakṣa*).

[Text: p. 8, Varanasi, and p. 29, Calcutta]

And it is not the case that these (statements of similarity) are figurative usages, since there is no block (no prevailing counterconsideration) to taking them in their primary sense (indirect, figurative meaning kicking in only if the primary, denotative is blocked).

Therefore, what it is to be similar is not uniform with respect to some property or other, not uniform for some possessor (of similarity), not uniform anywhere (that is to say).

[Text: p. 8, Varanasi, and p. 29, Calcutta]

Moreover, knowledge of such a possession of many properties of the other thing indicates similarity, makes it manifest. Let just such a cognition be the regulator of everyday speech about it. Why anything extra? If there were, then the possession of many properties of the other thing would not be uniform through sets of three, four, and so on properties even though it is making some similarity manifest.

Objection: The manifesting cognition is also not uniform, as in the case of fire being made manifest by perception and so on (inference or testimony, each a distinct source of knowing).

Gaṅgeśa: Wrong. For in that case every individual would be different to the extent of there being no natural kinds. Fire's pervading smoke, light, and the like is itself uniform (making inference possible).

Objection: (Okay, then) here, too, there is pervading (and analogy is a form of inference).

Gaṅgeśa: In that case everyday speech about similarity would arise from (cognition of) something being pervaded by something else (but it does not, arising instead from cognition of something's having properties had by something else).

And it is not the case that the possession of many properties had (also) by something else does not alone indicate similarity. For its not being alone responsible runs against our common experience. And without cognition of an abundance of the other thing's properties as a lot or a little, there would be no cognition of anything as very or only slightly similar to something else.

Objection: Possession of many properties of something else does not have a countercorrelate (in the fashion of an absence). Similarity, however, is not like that (i.e., it does have a countercorrelate though not in the fashion of an absence). So it sets up (something additional as) what is to be talked about.

Gaṅgeśa: No. (Just) like similarity, such possession, too, does have a countercorrelate.

Objection: Then there would be chaos (concerning just what is distinct from what).

Gaṅgeśa: That's wrong. Just here (it is further supposed that) to have the properties of x or to be non-distinct from x is what it is to be x. And this appears in the case of a perception (a perceptual recognition), "This is that (Devadatta I saw yesterday)." Given that the distinctness (between the two things) is evident, to have properties of that y which is other than whatever x (is the subject of comparison) is to be like that, whence there is (the expression and cognition) "This is like that; it is not that itself," since the two are different.

Objection: When cowhood is grasped (the common characteristic, being-a-cow) with regard to another individual (cow), then (if you were right) there should be (the expression and cognition) "This is like that cow" (which does not actually occur), and not (what does occur) "This is a cow."

Gaṅgeśa: Wrong. The collection (of properties required for one thing to be similar to another) includes (for example) cowhood simply as resting in individuals that are other than the thing (the subject of the comparison, the *gavaya* buffalo), since there is no comprehension of (the universal as a universal, i.e., as) something singular bound down to various individuals. Given a cognition of properties that reside in those (previously experienced) cows, there does, too, occur (the expression and cognition) "This is like those cows."

[Text: p. 10, Varanasi, and p. 34, Calcutta]

Objection: Then the cognition of the collection should be, "This, too, has horns and so on," and not "This is similar to a cow."

Gaṅgeśa: Likewise wrong. With respect to the single thing (the subject of comparison, the *gavaya* buffalo), the collection is related to both (the present buffalo and the remembered cow or cows), since we differentiate (as follows), "Having an abundance of properties had by the other thing is the first thing's similarity to the other."

But the New (Prābhākaras) say the following.[5]

New Prābhākara: Similarity is experienced as (*sui generis*, as) excluding entirely other things when (for example) there is a distinctive pair of pleasures. It is not, however, a universal (*jāti*) simply resting in both at once, since the difficulty would be that in the absence of both the universal would not have instances nor be eternal (unlike true universals). Nor is it another generated property. Thus it is to be granted that similarity is something additional.

Objection (to the New Prābhākara): For you, too, how without an indicator (to make it known) would the possession of the same properties make similarity manifest?

New Prābhākara: No. It is as you suggest (i.e., there is dependence on indicators) with respect to substances (that are similar), not with qualities and so on. Just for this reason, it is not made irrelevant (or otiose, *anyathā-siddha*) by a (need for an) indicator. Even in the absence of indicators, we do experience similarity.

[Text: p. 11, Varanasi, and p. 36, Calcutta]

Gaṅgeśa: The proposal is empty. A pair of pleasures unlike one another (except as pleasures) is not produced by a cause of pleasure in general, since that would land us in the predicament that another kind of pleasure would be produced, too.[6] Rather, each is produced by distinct Unseen Force (i.e., karma). And such Unseen Force, which arises from the practice of particular actions enjoined and causes pleasure, belongs to others, too. Thus for them, too, such pleasures come to be. Thus there is a distinct universal directing particular actions enjoined for everyone.

Therefore, since living beings are innumerable, since death is beginningless, there is no pleasure that is entirely different from that (somewhere, somehow) to be produced in the future. This is true, too, for other effects such as pains. For they would not be effects of a kind that has not been produced (elsewhere) or will not be produced.[7]

[Text: p. 11, Varanasi, and p. 38, Calcutta]

Objection: The destruction of the individual shows that (your) universal is impermanent (thus there is no such thing).

Gaṅgeśa: This also is wrong. There is no (possible) destroyer of a (true) universal. Just for this reason, universals remain even during a period of cosmic dissolution (*pralaya*).[8]

[Text: p. 11, Varanasi, and p. 38, Calcutta]

Moreover, similarity is distinct (in its instances) because of the countercorrelate's distinctness in relation to the single thing (to which it is similar). Similarity is not itself a single thing or unit, since we commonly speak of things as a lot or a little similar.

Objection: There would be in this way a grasping of it as a unit.

Gaṅgeśa: Then the difficulty would be that you would be grasping everything (since everything is at least a little similar to everything else). Gradually cognition of an abundance of properties belonging to the countercorrelate becomes the indicator (of similarity). Just such indication prompts the everyday speech—so it was said (by me earlier).

Objection: (On your view) there would be in this way, too, dissimilarity (as a unity), and not (simply a variety of) absences of similarity, since the opposite of that (definition of similarity) is also possible. The cognition (we actually have) is just of absence of similarity (not of dissimilarity), in that the sense of the prefix 'dis' (in 'dissimilarity', '*vi*' etymologically responsible for the '*vai*' in '*vaisādṛśya*) is to negate, to prohibit (directly and not just by implication).

Gaṅgeśa: Then there would not be dissimilarity with respect to the *gavaya* buffalo which is not the locus of the similarity intended with the statement, "A *mahiṣī* buffalo is like a cow," through (mindfulness of) the common (properties of) being sacred and having milk and so on. For it is not the case that there is cow-similarity or absence of cow-similarity there (since nothing about a *gavaya* has been intended when a speaker is speaking about a *mahiṣī* buffalo). Therefore, having properties in common and not having properties in common ground similarity and dissimilarity.

[Text: p. 12, Varanasi, and p. 41, Calcutta]

Objection: Similarity is the possession of many properties that reside in whatever (is the countercorrelate). Thus we have similarity even when the things compared are non-distinct, as is expressed in such verses as the following: "The sky has the form of the sky; the ocean is the analogue of the ocean./ The fight between Rāma and Rāvaṇa is like that between Rāma and Rāvaṇa." And it is not true that this succumbs to the difficulty that the reference of the word '*gavaya*' would include the cow, too, when there is similarity to a cow (pointed out). The meaning of the word 'similarity' in this case ("There is similarity to a cow there in the *gavaya* buffalo") would be the particular (similarity that rests in the *gavaya* buffalo). Otherwise, the definition would be too wide in including the *mahiṣī* buffalo.

Gaṅgeśa: Wrong. Right usage is to say "It is similar *to* that" or "similar *with* that." And the relationship (implied) is not present when the things are non-distinct nor is there common reference. With regard to the expressions (you quoted), "The sky has the form of the sky," the

meaning is just the sky or whatever is such that nothing else has the relevant properties.

[Text: p. 12, Varanasi, and p. 43, Calcutta]

Objection: One can draw an analogy between the sky and the ocean in that both involve endurance. Another fight (between Rāma and Rāvaṇa) can be analogized with respect to a particular fight between those two as it would be just between the two.

Gaṅgeśa: Also wrong (for the reasons just stated).

Objection: "Whether Devadatta or someone else no matter, this one (experienced today), is in the first place, similar to that one (experienced yesterday)." So there may well be doubt about the distinctness or non-distinctness (of two things) along with certainty about similarity. From this it follows that similarity should be admitted as a separate category.

Gaṅgeśa: No. We would use the word 'similarity' for a part (as similar to another part) attending only to the properties of Devadatta (not to Devadatta himself as similar to himself). How (can you account for the expression) "This is just the same as that, not similar to it" otherwise? Cognition and usage have it as, "This is similar to that, not that itself."

Objection: Here (in your counterexample) the word 'similarity' (is used in a figurative sense, that is to say) means merely the distinctness (between the two).

Gaṅgeśa: That won't do. It would be wrong here (as always) to look for indirect, figurative meaning if the primary meaning is coherent. Therefore, similarity is not a separate category.

[Text: p. 13, Varanasi, and p. 45, Calcutta]

Objection (by a Bhāṭṭa):[9] That may be. Don't let it stand that similarity is an additional category. Nevertheless, analogical knowledge (*upamiti*) is a cognition, (for example) "A cow is similar to a *gavaya* buffalo," that arises from cognition of cow-similarity in a *gavaya* buffalo known by perception or by testimony.[10] And this cognition is not perceptual, because what it is about is not immediately present (the cow, namely, or the cow portion of the cognition). Nor is it inferential, because there is no inferential mark (or prover in the cognitive process generating it). And the similarity present in the *gavaya* buffalo is not the mark (or prover), because it is not a property of an inferential subject (unlike, "There is smoke on yonder mountain").

Objection: In the case of another similar pair (a mule and a horse, for instance), that thing G which is the countercorrelate to the similarity resting in something F is similar to the F—this is known by perception, given that the pervasion has been grasped (between being-an-F and similarity-to-things-G). "A cow is similar to a *gavaya* buffalo" is (then) a bit of inferential knowledge that arises from (knowledge of) the countercorrelate of the similarity that rests in the *gavaya* buffalo.

Bhāṭṭa: No. Knowing, without grasping a pervasion, the *gavaya* buffalo as similar to a cow, knowing from the very first, by perception or by testimony, one has knowledge of *gavaya*-similarity in cows.

Moreover, the *gavaya*-similarity in cows is not an (inferential) probandum property, because it is from the first not cognized like that. And being the countercorrelate of the similarity resting in the *gavaya* buffalo is not known perceptually to rest in cows (given the terms of the example), since there is no sensory connection with that which would be the subject of the knowledge (cows, namely). Thus it is not to be inferred to be a bit of inferential knowledge. There would be an infinite regress: since its inferential mark (or prover) would not be perceptual, it would have to be inferred from another mark (*ad infinitum*).

[Text: p. 14, Varanasi, and p. 47, Calcutta]

Objection: The cow is similar to that *gavaya* buffalo, since it has an abundance of commonalities including parts and so on that rest in the *gavaya* buffalo, like another *gavaya* buffalo.

Bhāṭṭa: That should not be said. No other *gavaya* buffalo being known in addition (to the one known perceptually in the example), the cognition is of similarity to the *gavaya* buffalo applying to a cow.

Just for this reason, we think that without (cognition of) the similarity in the *gavaya* buffalo to the cow (cognition of) the similarity in the cow to the *gavaya* buffalo is not possible. For it is not the case that we can throw out as expressible (the cognitions) "This *gavaya* buffalo is similar to the cow" (at the same time as) "The cow is dissimilar to that (*gavaya* buffalo)." If cow-similarity as fixed by the *gavaya* buffalo is unknown (to a subject S), then without it (becoming known) no impossible cognition would come to be fixed.

[Text: p. 14, Varanasi, and p. 48, Calcutta]

Moreover, circumstantial implication (as we say for the separate and distinct knowledge source) is for you (the Nyāya philosopher) inference of the sort known as "negative only."

And no one says that we can know by perception and the rest (of the knowledge sources excluding analogy) that (the property of) being the countercorrelate to the similarity in the *gavaya* buffalo qualifies the cow.

Objection: Since in this way a camel would be cognized as dissimilar to a cow, the cognition of a cow as dissimilar to a camel would also be from another source.

Bhāṭṭa: No. If camel-dissimilarity as applying to a cow amounts to the possession of a lack of properties qualifying camels, then, like prior existence which applies to a remembered cow, the dissimilarity is known just by (the source we recognize as) non-perception.

[Text: p. 15, Varanasi, and p. 49, Calcutta]

Objection: (Such dissimilarity is) the possession of properties that do not occur in the camel.

Bhāṭṭa: Then the properties of a cow (which do not occur in a camel) would be grasped only in a cow (not in relation to a camel). In the present case, there would be something extra, something which is merely the absence of recalled cow-properties in the camel. And (cognition of) that comes just from perception.

Objection: The similarity that rests in x having y as countercorrelate, along with (corresponding) dissimilarity, is simply a cognition, because the similarity that rests in x having y as countercorrelate is, insofar as it is appearing, to be known by (one and) the same cognition.

Bhāṭṭa: No. Because of the difference between the qualifier and the qualificandum as countercorrelate (between, for example, cowhood and Bessie an individual cow), it is not established that it is to be known by (one and) the same cognition. Furthermore, a cognition with that (x) as its qualificandum portion does not arise, "Similar to that, it has distinct properties," since sensory relation to that (x) is the cause in the case of a perception of that (x) as qualificandum.

[Text: p. 15, Varanasi, and p. 51, Calcutta]

Objection: In perception, connection with the (object as) qualificandum is the (cognitive) cause, but not connection with the qualificandum as whatever (predicate), since the view is cumbersome (*gaurava*). Otherwise, there would be no perception of a pervasion of a qualificandum by (existence in the three times) the past, the future, and the present (whatever its properties).

Old Naiyāyika: No. The cognitive connection characteristic of (knowledge of) universals holds in the case of (cognition of) a qualificandum as past or future.[11]

Objection: The similarity to a *gavaya* buffalo that lies in a cow is the possession of universals (or common characteristics, *sāmānya*), such as being-horned, that are had by the *gavaya*. And if that cow-similarity in a *gavaya* buffalo is currently appearing (to a subject S), such possession is quite evident with respect to a cow that (let us imagine) is on the scene (too).

Alternatively, cow-similarity present in a *gavaya* buffalo is the belonging to the *gavaya* of (common characteristics such as) being-horned and so on which belong to cows. In this way, just that which does really belong to the *gavaya* buffalo as belonging to the cow would be what the similarity to cows amounts to. And this is known just by the senses. (Thus to know a similarity requires no special knowledge source such as "analogy.") Because the object connected with the sense organs is a universal (*sāmānya*), which is a single critter, unitary, there is (in cognition of similarity) something like the "This is that" typical of recognition of opposed terms.[12]

Old Naiyāyika: True (to an extent). Knowledge of (characteristics such as) being-horned and so on as belonging to the *gavaya* buffalo, knowledge which is about a cow as qualificandum ("The cow is similar to the *gavaya* buffalo" when no cow is present), is *not* generated by the senses. There is no sensory connection with a cow (in the terms of the example).

Therefore, the bits of knowledge "This is similar (to that)," "This has different properties from that," "This is longer than that," do not result from inference. There is no sensory connection with the object cognized as qualificandum (as there is typically with inference, e.g., the smoky mountain seen in the stock inference to fire), since there is no cognition of an inferential mark consisting of many (properties) belonging to x (the "that," e.g., the cow).

[Text: p. 16, Varanasi, and p. 53, Calcutta]

Objection: And in this way analogy is cognition of something which has a countercorrelate to whatever—so they say.[13] From analogy to things previously experienced cognition arises of something as other to something else without perception or the others (the other knowledge sources accounting for it).

[Text: p. 16, Varanasi, and p. 54, Calcutta]

Old Naiyāyika: That's contemptible. It is a matter of perception that elephants, for example, are mutually similar.[14] Thus that y which is the countercorrelate to the similarity in x is similar to x (and not just vice-versa, with x as similar to y). This holds in general. If there is knowledge of the pervasion (between such countercorrelatehood and being-similar), the cow is (judged to be) similar to the *gavaya* buffalo, since it is the countercorrelate to the similarity in the *gavaya*, like a sister with respect to her brother.

Furthermore, that the cow is the countercorrelate to the similarity resting in the *gavaya* buffalo is known just by the cognition of similarity in the *gavaya* buffalo, because, given similarity to the cow, the cow is known just as the countercorrelate. Otherwise, the unfortunate consequence would be that similarity to the cow would be incoherent.

Without grasping a general (*sāmānyataḥ*) pervasion between two correlates x and y, there would not be the (cognitive) result, "This is similar to that." Grasping a pervasion between two correlates x and y, there is, for us (of the Nyāya persuasion), negative(-only) inference, for the others (of the Mīmāṃsā school), circumstantial implication, (and) thus something else (i.e., circumstantially inferential knowledge) as result. There is (such) knowledge of similarity, which is a property that occurs in both correlates, by means of perception due to sensory connection with some object as qualificandum (as property-bearer).

That there is a sensory connection with the qualificandum as just so (i.e., as similarity *simpliciter*) is unmotivated. Otherwise, how could there be erroneous recognition of opposed terms, "This is that" (for example)? Furthermore, the countercorrelatehood to the similarity that rests in y is grasped just by the mind (working independently).

There is no motivation for the view that the qualificandum (with respect to the cognition, "The cow is similar to the *gavaya* buffalo," the cow, namely) is given perceptually such that inferential reflection (*parāmarśa*) can be fed—this has already been stated.

[Text: p. 17, Varanasi, and p. 56, Calcutta]

Jayanta Bhaṭṭa and company: A person (S) desires to know, "What kind of thing is a *gavaya*?" Having heard the answer, "As a cow . . . , so a *gavaya* . . . ," S pays close attention to the meaning of the analogical statement such that when S comes to see a particular individual (*gavaya*), which is as stated, S has the thought (the bit of knowledge), which is the result of analogy (as a knowledge source), "This is what is meant by the word '*gavaya*'."

And it does not come from the statement alone, since that would have the unfortunate consequence that even the individual (*gavaya*), before having been perceived, would be known (by S). Nor does it come from perception alone, since the consequence would be that a person (T) who had not heard the statement would also know the meaning of the word.

Nor is it from a combination of the two. For would this be a combination of knowledge sources or a combination of the results? On the first option, where it is matter of knowledge source, does knowledge-source status accrue to the combination or to the combined? Not the first, because there is no possibility of combination given a multiplicity of result in that there would be an (impossible) mutuality of auxiliary cause (x in part responsible for y and y in part responsible for x). Not the last, because the statement and the perception occur at different times. Although the statement and its meaning are made occurrent through memory, they are not successful (for our subject S in generating the bit of knowledge) because of the time delimitation.[15] And if the combination is of results, such that the bit of knowledge is contained within that, then the difficulty would be that testimony and inference would also be contained within perception.

[Text: p. 18, Varanasi, and p. 59, Calcutta]

Objection: Then does the result (the bit of knowledge) come to be outside the working of the knowledge source? Or, if it is within it, just how far does the thought (the knowledge) extend? Is there to be an auxiliary cause with each unique sense faculty and so on?

Old Nyāya: In that case, the activity of the open eye (the visual sense organ) would occur just when similarity is cognized. When there is such a cognition, then that (activity) is unnecessary (however).

The distinct occasion (for the arising of the bit of knowledge) is produced for someone (S) for whom the individual *gavaya* buffalo is qualified by similarity to cows experienced previously, who has the memory of the meaning of the (analogical) statement (made by the forester), by force of putting the information together just at the other (the later) time.

Therefore, the knowledge of similarity is assisted by authoritative statements and memory, but it is indeed something other than (something produced by) authority and perception. It is produced by the knowledge source, analogy.

Gaṅgeśa: This is the view of the Old Naiyāyikas, Jayanta and the rest. It is wrong. It fails to include (dissimilarity, i.e.) difference in properties. When it is said by a northerner cursing the camel, "Fie on the camel, whose neck is too long, whose lips slouch and tremble, eating sharp bristles (*śūka*), with a despicable arrangement of limbs, the worst of domesticated beasts,"[16] the southerner (who has not encountered a camel) having overheard this, traveling in a northerly direction, encountering such a thing, thinks, "Now this is a camel." Here how does he know (the meaning of the word)? It is not by analogy as so far analyzed (i.e., as the Old Naiyāyikas view the knowledge source), since there is no similarity (thus no cognition of similarity). And no other knowledge source is possible (here).

[Text: p. 19, Varanasi, and p. 62, Calcutta]

We answer (giving now the right view).[17] There would not be, first of all, comprehension of the word '*gavaya*' unless there were uniform specification of the reference, or (at least) the indication of it (*upalakṣaṇa*), on the part of the person (S) who would recognize (the *gavaya* buffalo) through perception which makes immediately evident the horns and so on. This is like such words as 'Chaitra' used with reference to a particular body (perceptible at the time) by those having the view that there is a single body (throughout the changes of childhood, youth, etc.): the word '*gavaya*' applies also to other *gavaya* buffalos. Nor does it happen that an inexperienced referent gets set in memory in some other way, (for instance) in the fashion of the word 'ether' (*ākāśa*) through technical (systematic) employment.[18] Just for these reasons—and because (in the case at hand) there is the (required) perception, and because the indication (*upalakṣaṇa*) is not excluded from the power of reference—it is just like that (namely, the word is understood by S on the occasion of perception of a *gavaya* buffalo to mean the critter in front, as well as others of the kind, those others being "indirectly indicated," *upalakṣita*).

[Text: p. 20, Varanasi, and p. 64, Calcutta]

Nor is the grasping of the word's meaning due to etymological explanation, as with such nouns as 'cook' ('*pācaka*', a cook, which is derived from the root '*pac*', "to cook"). Otherwise (i.e., if the meaning of the word '*gavaya*' were known etymologically in our paradigm case where the animal which is a referent is present), 'the cook' would not be used (being semantically inappropriate), if the root "to cook" is not employed (in the statement, too).[19]

Therefore, the power of reference is etymologically in conformity with, auxiliary to, that (action, e.g., of cooking). And from etymology there is also indication (*upalakṣaṇa*) that fixes (general meaning or sense, although not the specific referents).

Nor is the grasping of the word's meaning due to a narrowing of a meaning set in memory (by previous experience), like the word 'heaven' ('*svarga*', which gets its meaning from a narrowing of the meaning of 'pleasure', *sukha*, or '*su*' in '*su*' + '*arga*'), since there is nothing like that (with the case at hand).

[Text: p. 20, Varanasi, and p. 65, Calcutta]

Therefore, like the word 'earth', etc., which is employed because of earthiness indicated by such (properties) as smell, the words '*gavaya*' and company have referential power given that being-a-*gavaya*-buffalo, or the like, is indicated by such (properties) as its (cow-)similarity—this, in contrast, is the best (analysis of the) meaning. Otherwise, there would be opposition between the knowledge source (which produces knowledge) in the appearance of the result (as false).

And it is not the case that being-a-*gavaya*-buffalo has been experientially set in memory (in the terms of our example), because there is nothing that could have done so. Furthermore, it is not so set just from (the forester's use of) the word '*gavaya*', because that would involve (impossible) mutual dependence.

[Text: p. 20, Varanasi, and p. 66, Calcutta]

Objection: From the statement alone the occasion (for use of the word) is fixed (for S) by that (cow-similarity). At the very beginning,[20] S recognizes, "That which is similar to a cow, (already) understood by me to be expressed by the word '*gavaya*', well, this is that." Thus this is not the object of analogy (as a separate knowledge source).

Gaṅgeśa: Wrong. For it is not the case that the similarity alone is the grounds for usage (of the word '*gavaya*'), since this faces the difficulty that those who have not comprehended the similarity could not use the word correctly in everyday speech (but they do) and it is a cumbersome position. Nor is being-a-*gavaya* buffalo (the exclusive grounds for use of the word), because that has not been experientially set in memory (at the time of S's analogical knowledge). Just for these reasons, it is not both (the similarity and the universal), since this would render useless the analogical statement to communicate the occasion for the word's employment as understood by S. For the employment is coherent with respect to something's being a *gavaya* buffalo, not with respect to cow-similarity (which is yet to be comprehended), since the comprehension is of being-a-*gavaya*-buffalo, which is the employment's grounds.[21]

[Text: p. 21, Varanasi, and p. 68, Calcutta]

Objection (by objector.1): Although the statement has not produced (knowledge of the word's meaning) prior to the fixing of the occasion for use (through perception of the *gavaya* buffalo), still that very statement, being remembered, will fix for S the grounds of S's employment (of the word). The Vedas are indeed understood on the occasion of their being taught. The (Vedic) auxiliaries (such as prosody and grammar) and sub-auxiliaries (such as Mīmāṃsā and Nyāya) may be completed at another time (without undermining the fact that the Vedas have been understood).

Objection (by objector.2 against objector.1): It is (all) completed, because it is understood even prior to the meaning of the statement, so to say.

Objector.1: That should not be alleged, because there's reasonable doubt about both (the range of) the indication and the grounds for employment of (S's comprehension of) similarity to a cow. Later, when being-a-*gavaya*-buffalo is comprehended (upon the encounter with one), there will be an understanding of the entire connection (of words according to their meaning, *anvaya*), when the indication of the similarity (as comprehended) has become certain—aided (perhaps) by considerations of simplicity as shown by reasoning (*tarka*). Thus here we have something like (the process whereby we understand indirect meaning, as with) "The village is in (the water of) the Gaṅgā" (which is properly understood as "The village lies on the bank of the Gaṅgā" while connoting that it has a meditational atmosphere).[22]

Gaṅgeśa: Wrong. Although there may be reasonable doubt about indication and grounds for employment, (the construction) "That which is similar to a cow is this which is the meaning of the word '*gavaya*'" is made the appropriate connection (of words according to their meaning) just by the words referring to the *gavaya* being in the same case (and the *gavaya* buffalo being the substratum of the qualifications), independently of another source's informing (the knowledge).[23] This is like the communication, "There's a cloth," even if there is doubt about whether it is red or not red. Otherwise, even when a statement has been completely apprehended, there would be the difficulty that a distinct statement would be required to know the first's connection (of words semantically) because another source is (thought of as) an auxiliary cause.

Here with "The village is in (the water of) the Gaṅgā," it is true that there is dependence on another source with regard to the words' meaning which is not (literally) fit to express a semantic connection. And if the meaning also comes under the sway of a cognized relationship, then there is the difficulty of a different statement.

[Text: p. 22, Varanasi, and p. 70, Calcutta]

Objection (by a new first-level *pūrvapakṣin*, objector.1): Because the (apparently) intended meaning is impossible, as with "Usher in the sticks," let it have indirect, figurative meaning (as with, "Usher in the ascetics carrying walking sticks"). With respect to the analysis of the meaning of the word '*gavaya*', to produce an understanding of it, an expert (*āpta*, the forester) makes an (analogical) statement. And that

would not occur without acquisition (or understanding on S's part) of the grounds of the employment.

And the similarity to the cow mentioned, "It's like that," which has the cow as a substratum in common, is not to be thought of as having indicated being-a-*gavaya*-buffalo (the class character or universal) through the words 'similar to a cow' (in the forester's statement, "A *gavaya* buffalo is similar to a cow"), to consider the intended meaning.[24] And it is wrong to think that here, as with "There's smoke over there," the intention to communicate the fire over there is accomplished through analogy (*upamāna*) instead of figurative meaning (*lakṣaṇā*).

Furthermore, here there is no other knowledge source whereby the communication could be accomplished, since analogy has yet to be shown to be one. Otherwise, there would be mutual dependence. Moreover, it will not do to say that indirect, figurative meaning accrues to the statement (as a whole) as that is a property of words. Figurative meaning applies to a single word although the other words condition the meaning—this is what we want to say.

Objection (by objector.2 to objector.1): Although it is through indirect, figurative meaning that being-a-*gavaya*-buffalo is set in memory (for S), no reference to the individual (*gavaya*) is cognized from the words (of the forester). Thus it is necessarily granted that another source would make known the reference to the qualified (individual).

Furthermore, there is no rule that says that an x-situated property (e.g., blue) expressed by a word for x (blue-thing) is (invariably) that which is expressed by that word, since there is a counterexample in the case of the word meaning the class character (being-blue or bluehood as distinct from the particular instance).

Reply (by objector.1): Wrong. It is a matter of indirect, figurative meaning that indeed the individual *gavaya* buffalo (yet to be encountered) is cognized as qualified by (the class character) being-a-*gavaya*-buffalo when the analogical statement has been understood in its intention to make S know its express content (which includes all *gavaya* buffalos).

Objection (by objector.2): If the intended meaning grasped through the words indicating the cow-similarity were directly (unmediatedly) to being-a-*gavaya*-buffalo, then there would have to be indirect, figurative meaning. But the intended meaning is not understood directly (unmediatedly). Otherwise, the same would hold for "There is smoke over there" (which is intended to say that there is fire over there although there is no direct fire-reference).

Reply (by objector.1): Wrong. There is nothing else that would set it in memory (set being-a-*gavaya*-buffalo in memory). It is understood directly, because the intended meaning is just what intended meaning is. And analogy indeed is not like this (and should not be posited as a separate knowledge source), since there would be mutual dependence.[25]

[Text: p. 23, Varanasi, and p. 73, Calcutta]

Gaṅgeśa: Don't think like that. With respect to the understanding of an object that prompts the employment, "This, which is similar to a cow, is referred to by the word '*gavaya*'," it is not the intended meaning (of the forester's analogical statement) but just that which should be named according to its own nature. Here, too, and wherever, according to the collection of causal factors sufficient (for knowledge), which have been stated (earlier), there results a precise knowledge of the occasion (i.e., when S identifies the *gavaya* buffalo as the word's referent).

Furthermore, with respect to the particular (*gavaya* buffalo) and the grounds for the (later) activity (of speech on S's part), it is false that the intended meaning would be—for the purpose of reflective analysis of it by someone who wants to—the seed (or spark) for figurative meaning that works through (knowledge of) its impossibility (as a matter of strict reference).

Moreover, in a case where there is nothing in the intended meaning directed to (providing) the grounds for (S's later) activity of speech, the statement (for instance, given earlier) whose intended meaning is to curse, "Fie on the camel, whose neck is too long, etc. (whose lips slouch and tremble, eating sharp bristles, with a despicable arrangement of limbs, the worst of domesticated beasts)," S nonetheless encountering such an individual and remembering the meaning of the statement (of the camel-cursing northerner) has the thought (the knowledge), "This is what is referred to by the word 'camel'."

Furthermore, it is always true that it is just the impossibility of relatedness (of the semantic units understood denotatively, *anvaya*) that is the seed (or trigger) of figurative meaning. Even with "Usher in the sticks" and the like, the point that there be honoring (of the ascetics) and so on is comprehended by means of the context and other factors. Since there is in the case of sticks and the like taken together with an action such as ushering and the like no relatedness (*anvaya*), S, not knowing the intended meaning—in part because (literal) intended meaning is impossible (here) such that S couldn't know—comes to know a meaning that is necessarily dependent on context and other factors.

Objection: Context and the others are not uniform (whereas units of meaning are uniform). The uniformity of whatever (word or expression) pervades (i.e., is a necessary condition on) its meaning. This being the case, let the intended meaning's impossibility be the seed (or trigger) of that (figurative meaning), since this is the simplest theory.

Gaṅgeśa: Wrong. There is no opposition between the pervasion (you claim) and the non-uniform, as with "Smoke" and the like (when what is intended is fire). Therefore, the word '*gavaya*', which is clearly known as expressing something or other in general since S knows that

the word is used by fellow students (but does not know precisely or in particular), comes to be (fully) known in "The thing characterized as qualified by being-a-*gavaya*-buffalo is what is meant by the word '*gavaya*'"—it should be concluded because of simplicity.[26]

[Text: p. 24, Varanasi, and p. 74, Calcutta]

Further, that (analogy) has other knowledge sources as its auxiliaries. And on the particular occasion (as described) there is no other knowledge source (that could produce the result specified). Therefore, whatever has knowledge sources as its auxiliaries should be posited as another knowledge source.

Objection: Let it be inference (that is responsible here). For example, the word '*gavaya*' is (known as) expressing the thing characterized as qualified by being-a-*gavaya*-buffalo—when other ways it could be known are lacking, a way such as the word 'cow' being used by S's elders to refer to a cow (in the presence of S).

Gaṅgeśa: No. Being-a-*gavaya*-buffalo is not known by S as the grounds for the (later) activity (of speech) even though S has grasped that whatever it is that is qualified by being-a-*gavaya*-buffalo is what is meant by the word. Furthermore, without knowing the referential power S would not be able to use some other way in whatever circumstances to pin it down, because mere employment of words in the same case ("This is that") is common to (all) indication of grounds for employment.

[Text: p. 24, Varanasi, and p. 76, Calcutta]

Objection: One would introduce a cumbersome theory in having cow-similarity be the grounds of the activity (of speech); one need not introduce analogy. And so by suppositional reasoning (*tarka*) it becomes certain that there would be no grounds for the activity otherwise, such that the word '*gavaya*' has grounds for its usage in (the idea of) being-a-*gavaya*-buffalo. Given that there can be grounds for the usage in no other fashion, whatever is not the one way (~S), that is not the other (~H), since it has grounds for usage.[27]

Gaṅgeśa: Wrong. Suppositional reasoning does not bring certainty. And such suppositional reasoning (as you give) is not rooted in (a good inference where there is) a grasping of a pervasion, in that from a contrary inference something could be established.

[Text: p. 25, Varanasi, and p. 77, Calcutta]

Objection: The word '*gavaya*' has grounds for its usage—this is just the conclusion of an inference based on common characteristics (*sāmānyato dṛṣṭa*) aided by suppositional reasoning which establishes that the word '*gavaya*' would not have grounds for usage otherwise.[28] There is, however, no additional knowledge source. Imagining (the type of animal), one conceives the suppositional reasoning, which is an auxiliary cause (for the eventual knowledge).

Gaṅgeśa: No. Although "This has grounds for usage" and "The other has no grounds for usage" can be conceived, (the proposition) that the word '*gavaya*' has grounds for usage is not known except through the additional knowledge source (viz., analogy). The rule is that inferential knowledge (i.e., the result of inference as a knowledge source) has predication content (*prakāra*) precisely in making specific a pervading by a pervader.

[Text: p. 25, Varanasi, and p. 78, Calcutta]

Objection: As by an inference of the *sāmānyato-dṛṣṭa* type given desire (as a property requiring a property-bearer) aided by (the suppositional reasoning) ruling out (all eight) candidates, its not having any of the eight substances as its locus (or property-bearer) becomes known (and thus that a ninth substance, the self, *ātman*, is to be posited). Otherwise, how would the fact that desire does not have any of the eight as locus get grasped? There are reasons that rule out the particular candidates (the eight substances established on other grounds, earth, water, fire, and so on), namely, the substances being determined to be objects contrary to (having) desire. Nevertheless, aided by the kind of suppositional reasoning called "the cumbersome" (i.e., considerations of parsimony or simplicity), the *sāmānyato-dṛṣṭa* type of inference makes it known that there would be no grounds for employment in another fashion. Then, this being known, later there would be an inference of the "negative-only" type. (In other words) in comparison with (the cumbersomeness of) positing another knowledge source to be conceived, it is correct to hold that the well-known (well-conceived) sources are the causal factors.

Gaṅgeśa: No. With respect to desire (which would be used to prove a self, *ātman*, inferentially), it is not by a *sāmānyato-dṛṣṭa* type of inference that it is known that it does have any of the eight as locus. That is determined, first of all, just by blockers of the others aided by the blocking of each (i.e., all the ruling out taken together) such that the knowledge that it does not have any of the eight as locus is qualified by the knowledge that desire is a property of a substance. The *sāmānyato-dṛṣṭa* type of inference produces knowledge of (a self, *ātman*, as) an entity as qualified by properties precisely through determination of this pair of qualifiers (namely, its not having any of the eight as locus and its being a property of a substance).[29] Furthermore, there is no occasion to employ suppositional reasoning (of the "cumbersome type") in that it (the self) is made known (in this way).

[Text: p. 26, Varanasi, and p. 81, Calcutta]

Objection: The statement, "This which is similar to a cow is the meaning of the word '*gavaya*'," is about pervasion (pervasion the knowledge of which underpins inference). We get it from a statement where a pervasion is understood whose arising comes from inferential knowledge: "This is what is referred to by the word '*gavaya*', *since* it is similar to a cow, like some other individual (*gavaya* buffalo)."

Gaṅgeśa: That should not be alleged. For S, knowing the cow-similarity (through experience), would not question anyone, "By what word is this called?" Rather, understanding in general the meaning of the word '*gavaya*', S asked, "What is a *gavaya* like?" And so what would be the point of an inference if something's being pervaded were known by means of usage and precedence?[30]

[Text: p. 26, Varanasi, and p. 82, Calcutta]

Objection: "What characteristics does it have?" is a statement about definition, which is the meaning or point of the question. And in this way that which is to be formally spelled out in an inference (accounting for what you call analogical knowledge) is as follows: "This is that *gavaya* buffalo" is to expressed in everyday speech, *since* it is similar to a cow; what is not so, is not similar to a cow, like an elephant.

Gaṅgeśa: Wrong. For there is no knowledge source for the difference (you cite) with elephants, because the entire formal proof is impossible to understand (without the difference provided by analogy as a knowledge source) in that the everyday speech of even just a few people would be equivocal.

Furthermore, "What sort of . . . " or "Having what characteristics . . . " is not the meaning of the question (asked by S). For S, not knowing the inferential mark (the prover, of your inference) nor the reference of the word '*gavaya*' as used by anyone, would not have understood what that one (the forester) wished to say so as to be able to pose a question having that meaning (of yours). S's question concerns the individuals that would provide the grounds for the employment (of the word).

Objection: The question's meaning and point: What is the inferential mark for that which would be the grounds for employment of the word '*gavaya*'?

Gaṅgeśa: No. For that is simply not to be inferred by him such that, it being made certain for him by that inference, he would come to know what he does.

Objection: The question concerns only the cause of S's (eventual) knowledge (qua qualificandum). The answer gives its qualifiers.

Gaṅgeśa: No. Since he does not know the particulars (that would ground use of the word), he would be answered (by the forester) *also* with reference to (his need for a) sensory encounter: "If you go into the forest, you will see."

Therefore, S's questions would concern only the distinct grounds (of employment): "What is a *gavaya* like? On what grounds does one employ the word '*gavaya*'?"[31] Since the one asked (viz., the forester) would not be able to show immediately, directly (*sākṣāt*) what it is to be a *gavaya* buffalo, he would talk about similarity, indirectly indicating it (what it is to be a *gavaya* buffalo). And then later when an individual (*gavaya* buffalo) has been seen by S who remembers the meaning of the analogical statement, he acquires the knowledge: "This thing qualified by what it is to be a *gavaya* is the referent of the word '*gavaya*'." S's knowledge is of a particular that is the grounds for the employment (of the word). It is the result of analogy (as a knowledge source).

[Text: p. 27, Varanasi, and p. 87, Calcutta]

Objection: It would be just an inference of the negative-only type that would give the thought (the knowledge) to S that what it is to be a *gavaya* buffalo (the universal or class character) provides the grounds for use (of the word): Given that there is no such grounds in anything else because of the cumbersomeness that would involve, (whatever is not the one way, that is not the other), *since* it does have grounds; (what is not so is not so).

Gaṅgeśa: No. Insofar as a bit of suppositional reasoning is not rooted in (a good inference where there is a grasping of) a pervasion, neither a charge of cumbersomeness nor its opposite would be authoritative.

Objection: If that's not a knowledge source, then how will your analogy fare in the face of doubt about the grounds being something else, also aided by suppositional reasoning?

Gaṅgeśa: Wrong. Just from analogy aided by suppositional reasoning about cumbersomeness in the form of considering whether the usage could not have other grounds, S has the knowledge that the usage has grounds (but not knowledge of the *gavaya* buffalos that as such actually are the grounds for use of the word).

Objection: Okay, let us take it for granted that it is just from a knowledge source, aided by suppositional reasoning of the cumbersome variety, that it is known that the usage has grounds. It is established (for S) that it has grounds in what it is to be a *gavaya* buffalo (the universal or class character).[32]

Gaṅgeśa: But it is not so; the definite knowledge does not arise through a negative-only inference. Provided that something's being an effect (of something else) has, without a prevailing counterconsideration, already been concluded, a negative-only inference might come about. But where from the first there is no negative correlation, the result comes just from (the consideration that) something is an effect (of something else); (in other words, here) we would have the ideas that the usage does not have grounds in something else (something other than what is called a *gavaya*) and that it does indeed have grounds. Nevertheless, the notion that the word '*gavaya*' has grounds (for its use) in what it is to be a *gavaya* buffalo (the universal or class character), this notion would not be established (for S until he encountered an actual *gavaya* buffalo)—this we have already said (previously).

Moreover, here according to (the pattern of) everyday speech the grasping of the referential power of the word is with respect to the object of the (word's) employment (i.e., the individual), not to its

(abstract) grounds (the universal), since there is no obstacle to that. Nor is there grasping of grounds in what it is to be a cow or anything else in the rejection of other possibilities through considerations of cumbersomeness and overextension, since there is (here) no suppositional reasoning of the cumbersome or any other variety and since (for that) there is no knowledge source. Therefore, given just a grasping of the power of reference with respect to the individual, S makes himself come to understand, by means of auxiliary considerations such as simplicity, that there are grounds in what it is to be a cow and the like (e.g., other types of animal) in that there the usage would not have grounds otherwise.[33]

[Text: p. 28, Varanasi, and p. 91, Calcutta]

Objection: In all cases just that (the understanding of a word's referential power) is the result of analogy.

Gaṅgeśa: Some hold this view. It's wrong. S does also (if he does, in addition to having analogical knowledge) make himself come to understand grounds which do indeed, aided by such considerations as simplicity, make one comprehend the power of reference—as, for example, with the unity of the creator with respect to earth and so on.

Objection: Is it that in this way because of simplicity in comparison with many distinct makers, the effect (earth and so on) makes one know the unity of the creator? (I say) it does indeed make it known. Later, the view is (challenged and) rejected because of prevailing counterconsiderations.

Gaṅgeśa: No. A view appears to be wrong in that its object or content is blocked (or has been defeated). Furthermore, reflection on simplicity with respect to the view that fails the test, the non-simple, shows that it is wrong such that an inference based on it would falsely appear to be true.

Objection: S's analogical knowledge amounts to an etymological analysis (*vyutpatti*). Otherwise, it could not be explained.

Gaṅgeśa: That should not be alleged. If etymological analysis were an auxiliary cause for comprehending the word, it would rule out (analogy as) another knowledge source. But according to just what cognition is considered, there is (afterwards) etymological analysis, cognition which (here in this case) amounts to knowledge (by analogy) of a particular thing referred to.[34]

[Text: p. 29, Varanasi, and p. 95, Calcutta]

But others hold the following.

Objection: Inasmuch as words such as 'which' and 'that' ('*yat*' and '*tat*') lack a continuous uniformity (of reference), from grasping their power of reference with respect to just one thing, (it is realized) they may be used for another.[35] The everyday pattern of speech (with such pronouns) requires another word (the antecedent or consequent). They are different from the other words (on which their referential power depends). (Similarly) analogy (as non-uniform in involving distinct similarities and as having other knowledge sources as auxiliaries) is not an additional knowledge source.

Gaṅgeśa: That's wrong. The grasping of their referential power is by indication (*upalakṣaṇa*) according to what has been set in the mind and so on, which happens in common (for all things potentially referred to, a pot, a cloth, and so on). Just from the particular held in thought, it is determined definitely (to be the meaning of the pronoun), since the pattern of everyday speech is just so. Otherwise, even if there were another knowledge source, the fault would remain (of violating the pattern of speech). For grasping the referential power in these cases is not just with respect to a uniform idea.

[Text: p. 30, Varanasi, and p. 97, Calcutta]

Objection: Why should the likes of the mother of Maitra be picked out in the grasping of the referential power of words like 'mother' ('*mātṛ*')? The power works through the likes of her being the wife of Janaka (being known). That there is a public pattern of everyday speech in particular (that provides an answer to this question or similarly that supports a posit of analogy as an additional knowledge source) should not be said. For the meaning of one word follows upon (and connects with) the meaning of another, and being-the-wife-of-Janaka is not like that (not being said). So how through (mention of) Maitra is there a connection intended with an idea of Janaka? So we would need another knowledge source (and another and another and another for other meanings, in the spirit of your posit of analogy).

Gaṅgeśa: That's wrong. Insofar as dependence on an idea of Janaka is to be generated (by a statement), (the sentential requirements of) semantic fitness and so on (grammatical expectation and proper representation) would make the connection with (would make the connection from the mention of) Maitra.[36]

[Text: p. 31, Varanasi, and p. 98, Calcutta]

But the definition (of analogy) is that it is the instrumental cause (the trigger) of analogical knowledge.

And what it is to be analogical knowledge (the class character) is a natural kind (*jāti*, "universal"). It is not true that it is unestablished (as such). From (reflection on) what it is to be a cause (or, the idea of a cause) it is evident that to have a particular cause it is necessary to be a discrete effect. (Both are here.)

Alternatively, analogical knowledge is (may be defined as) knowledge of (i.e., coming to know) the grounds for employment of a word whose referent as a common substratum (i.e., qua qualificandum) is fixed by a property (or properties). What it is to be such grounds is to be the object of the word's referential power through some predication content (*prakāra*, i.e., some general sense as would be communicated by the forester in the stock example).

Or, analogical knowledge is the discriminating knowledge through some predication content of the grounds for the use of a name (a noun) that has not been understood previously but that has the same referent as a common substratum (i.e., qua qualificandum) as the meaning of a statement (e.g., the forester's analogical statement).

Or, it is the discriminating knowledge through some predication content of the grounds for the use of a name that has the same referent qua common substratum as the meaning of some particular (analogical) statement.

With "What is dissimilar to a cow is not a *gavaya* buffalo," here, too, making conversions (from "not dissimilar" to "similar" and the like), we get indeed the (same) intended meaning that we have elsewhere.—Thus is everything all cleared up.

Notes

NOTES TO CHAPTER 1

1. Vātsyāyana, for example, whose commentary is the oldest extant, explains the word in this way in his "Bhāṣya" (*NySBh*) on *Nyāya-sūtra* (*NyS*) 1.1.41 (pp. 330 and 38–39), a sūtra addressing the "final ascertainment," *nirṇaya*, that comes about as a result of philosophic inquiry, i.e., *nyāya*. He also explains what *nyāya* is in his commentary on the very first sūtra (*NySBh* 1.1.1, p. 35). All the later commentators elaborate. In brief, *nyāya* is the bringing to bear on a disputed thesis and/or counterthesis factual and hypothetical considerations that help to determine the truth.
2. Meurath 1996 presents the arguments that chapters 1 and 5 of the *Nyāya-sūtra* are older. Although chapter 1 covers all the topics mentioned in the first sūtra, those topics are disproportionately concerned with debate and reasoning, and chapter 5 is almost entirely dominated with talk of formal and informal fallacies.

   In referring to the text, I shall assume—for convenience, with the tradition—that Gautama, also known as Akṣapāda (Mr. "Feet-gazing," so lost in thought is he), is the author of all the sūtras.
3. There are many materials available now for scholarship on Nyāya as well as a sizeable secondary literature. Just about everything from manuscripts to secondary works, through 1985, is listed in Ganguly 1993. An up-to-date, more complete bibliography—but not just for Nyāya—targeting classical Indian philosophy as a whole (excluding aesthetics) is available online: Karl Potter, ed. *Encyclopedia of Indian Philosophies*, Vol. 1, Bibliography: http://faculty.washington.edu/kpotter/.

   Comparatively little work has been done on the later period of Navya Nyāya. Groundbreaking is Ganeri 2011 which examines Nyāya developments in the early modern age, the fifteenth through seventeenth centuries. These are largely not covered in this book.
4. The *Nyāya-sūtra* itself mentions three synonyms (*NyS* 1.1.15, p. 213) in the midst of sūtras laying out the skeleton of Nyāya's philosophy of mind.
5. Both '*siddhānta*' and '*nirṇaya*' occur in the long compound listing the topics of the text in the very first sūtra, *NyS* 1.1.1 (p. 28). The former is elaborated in particular under *NyS* 1.1.26–31 (pp. 260–268), a stretch of sūtras where four varieties are described. The latter, *nirṇaya*, differs from *siddhānta* mainly in being a single belief as opposed to a web of tenets, *siddhānta*, self-consciously held as true.

   Although not highlighted by modern scholars, the Nyāya concept of *siddhānta* is picked up by the classical textbook authors, e.g., Mādhava,

p. 163: "A 'tenet' (*siddhānta*) is something which is accepted as being authoritatively settled as true."

6. Vātsyāyana says as much in his short introduction to *NyS* 1.1.1 (*NySBh*, p. 21), for example.
7. The *Nyāya-kośa* (Jhalakikar 1978: 663) provides this reference to Laugākṣi's definition (*Tarka-kaumudi* 1,7), which is influenced by Gaṅgeśa (*tadvati tad-prakārakatva*, (a cognition's) "having predication content φ about a φ-object," or "awareness of something there where it is," *Tattva-cintā-maṇi* (*TCM*), perception chapter, p. 236). The only edition of the *Tarka-kaumudi* I have seen, edited by Dvivedi 1886, has a variant reading without the example.
8. That is, as Naiyāyikas see things. Compare the designations of the sides of the controversy known as *parataḥ* vs. *svataḥ prāmāṇya*, which is the question whether a bit of knowledge is shown to be so within itself (*svataḥ*) or that that requires another (*parataḥ*), a certifier. The former is the position of Mīmāṃsā, Yogācāra, and Vedānta (for different reasons); the latter Nyāya's.
9. For example, Gaṅgeśa, *TCM*, perception chapter, p. 218.
10. For example, Vātsyāyana introducing *NyS* 1.1.1 (pp. 26–27) and 3.1.51 (p. 779: *pramāṇasya tattva-viṣayatvāt*).
11. Such trust, *viśvāsa*, is shown in action, as will be discussed. The word '*vāda*', "opinion" or "position," is close to English "belief." But the Sanskrit word is usually used for an interconnected patch of beliefs or propositions, although sometimes a position or principle can be stated in a single sentence.
12. This comes to be called *eka-vṛtti-vedyatā*, an object as known at once as something qualified by a property. Bhāsarvajña appears to be one of the first to discern it, although it is implicit in Vātsyāyana's theory of illusion, it seems to me, as will be discussed: Bhāsarvajña, *Nyāya-sāra*, pp. 18, 19.
13. Dispositions, *saṃskāra* (sometimes called *vāsanā*, "memory vectors") are one of twenty-four types of property recognized in early Vaiśeṣika. They are much discussed also in the Yoga system as well as in Yogācāra Buddhism. Mental dispositions are thought to underpin karma and habits along with memory, and some are said to be carried by an individual into her next birth.

    The Vaiśeṣika philosopher Praśastapāda (c. 575) lists *saṃskāra* as one of twenty-four qualities, finding three subtypes, *vega* (impetus or speed), *bhāvanā* (the experiential, the mental), and *sthiti-sthāpaka* (elasticity): *Padārtha-dharma-saṃgraha* (*PDS*), pp. 570–574. Later Naiyāyikas debate about whether the overall category captures a true universal, a natural kind, as opposed to a mentally projected generality (e.g., Annambhaṭṭa, p. 361), but it is not too difficult to see the commonality, the dispositional nature of all three as a kind of self-perpetuation.

    Note also that when Yogācāra idealists such as Asaṅga (c. 300 CE) and Vasubandhu (c. 350) talk of a "storehouse consciousness" (*ālaya-vijñāna*), they are thinking about things as webs of *saṃskāra*s, more commonly called *bīja*, "seeds," and *vāsanā*, "mental vectors" in the broadest sense—responsible for, in this idealist perspective, not only internal objects but also material things as, to use J. S. Mill's phrase, "permanent possibilities of experience."
14. This is the New Nyāya theory. The match between cognized and cognition as understood by late Naiyāyikas is elucidated by Sibajiban Bhattacharyya 1987: 226–229.
15. The theory is elaborated by Vācaspati under *NyS* 1.1.2, which mentions "wrong cognition," *mithyā-jñāna*, understood by Vātsyāyana as *viparyaya*, "falsehood," and glossed by Uddyotakara as "The idea that something that is not F is F," *atasmins tad iti pratyayaḥ* (*NySV*, p. 72). Under this, Vācaspati takes the opportunity to explain the *anyathā-khyāti* theory of perceptual error (*NyVTatp*, pp. 73–75; Thakur ed., pp. 67–68). He quotes Kumārila, the Mīmāṃsaka, who agrees with Nyāya that cognitions can be false, as opposed to the Prābhākara Mīmāṃsaka who takes cognition by nature to be true (*Śloka-vārttikā*, *nirālambana-vāda* v. 117–118, pp. 137–138). A little before Vācaspati but after Kumārila there is also Bhāsarvajña (ninth century) who uses the label "*anyathā-khyāti*" for the Nyāya theory which he lays out after having identified, and refuted, eight competing theories: *Nyāya-bhūṣaṇa*, pp. 25–32.
16. The Nyāya idea is thus close to the "objective justification" of John Pollock (1986: 183–190) and other analytic epistemologists, which also entails truth, as will be elaborated later near the end of the section.
17. See in particular Vātsyāyana on *NyS* 2.1.20 quoted and translated in the first section of the next chapter.
18. Vātsyāyana under *NyS* 1.1.1., *NySBh*, p. 21, presents the bit of *tarka*. Mohanty 2000: 37–38, for example, misinterprets it as foundational.
19. Gaṅgeśa spells this out in the "Knowing Veridicality" section of the *TCM* perception chapter, pp. 126–131.
20. A good example is an inference Uddyotakara makes for the I-cognition being perceptual because of its independence of a need for memory of a pervasion as well as its conformity to the distinct nature of the object, "like a cognition of color": *NySV*, p. 704. See also Taber, "Uddyotakara's Defense of a Self," forthcoming.
21. "After-cognition," *anuvyavasāya*, is said to be a perception that takes a preceding cognitive occurrence as object. Matilal 1986: 141–179, "Knowing That One Knows," is a lengthy and penetrating discussion.
22. The assumption is that normally we do give the benefit of the doubt to our informants. But there are also arguments to the effect that not doing so as a general policy is incoherent. For example, Gaṅgeśa points out that those who would communicate that testimony is not a knowledge source contradict themselves: the beginning of the *TCM* testimony chapter, translation, p. 276.

    See also Gautama's sūtra 4.2.36 and commentaries, *NyS*, p. 1088, to the effect that the concept of the non-veridical is parasitic on that of the veridical. The surrounding stretch of sūtras is directed against a radical illusionism usually attributed to Mādhyamika Buddhism. Not everything can be a dream or an illusion because the concept of a dream is parasitical on that of waking experience. Vātsyāyana says explicitly in his commentary on *NyS* 4.2.34 that the concept of the apparent whatever (as an apparent person which is really a post misperceived in the distance) presupposes the concept of the genuine variety (formed from previous experiences of persons): *NySBh*, pp. 1083–1085. Michael Dummett (1994: 265) writes: "To view the matter otherwise [than that we always need a particular ground for declining to take things as we are told that they are] is to subvert the whole institution of language."
23. Gettier 1963.
24. Pollock 1986: 180–193. Pollock's predecessors here include Ginet 1975 and, as Pollock notes (181n4), Kleine 1971. BonJour 2003: 23 argues that the failure of epistemologists to solve the Gettier problems shows that the concept of knowledge is obscure. It seems to me, however, that there are at least two solutions, Pollock's and Robert Nozick's (1981), which overlap. I agree with Pollock's judgment (187) that the concept of knowledge is itself rather simple but in requiring what he calls objective justification inherits the complexity of social norms concerning justification.
25. Saha 2000: 62 identifies a Gettier case due to the Advaitin Śrīharṣa that is taken up by Gaṅgeśa as well as the (Prābhākara) case of a deceived liar (2000: 70) that is discussed here in our chapter on testimony. But he overlooks the case I am about to discuss.

26. Gaṅgeśa and Mathurānātha discuss this under the rubric of the "reflection," *parāmarśa*, required for inference: the *TCM* chapter on inference, pp. 544–547.
27. Nyāya employs a word, *bādhaka*, "defeater," in ways that almost perfectly match the usage in analytic epistemology. For example, negative coherence is a belief-eliminator accomplished by *bādhaka*.

    Now it is through the notion of "undefeated defeaters" that John Pollock (1986) is able to cash out his notion of "objective justification" that he claims is necessary for knowledge as is shown by the Gettier cases. Pollock's analysis is amenable to Nyāya's point of view, it seems to me. In any case, let me admit that my presentation of the Nyāya position relies on Pollock's solution of the Gettier problem. I have also discussed this and other Gettier cases with traditionally trained Nyāya scholars ("pundits") in India, including perhaps the greatest living Naiyāyika, N. S. Ramanuja Tatacharya, who agree with me in filling out the Nyāya analysis here.
28. This is sometimes called the new evil-demon problem for externalism. The modern-day example of a brain in a vat is apparently due to Hilary Putnam (1982: 5–7).
29. Vātsyāyana on *NyS* 2.1.16, p. 433, has a particularly clear statement about this.

NOTES TO CHAPTER 2

1. *pramāṇato 'rtha-pratipattau pravṛtti-sāmārthyād arthavad pramāṇam | pramāṇam antareṇa na artha-pratipattiḥ | na artha-pratipattim antareṇa pravṛtti-sāmārthyam* | (pp. 1 and 21).
2. All the *NyS* commentaries develop the argument: pp. 1ff.
3. Nāgārjuna, *Vigraha-vyāvārttinī* 31, pp. 15–16 and 115.
4. Eli Franco (2004) argues that Nāgārjuna may well not have Nyāya in mind but rather an early Buddhist epistemology since there is mention of a justification regress in an early Buddhist manuscript. This, however, as Franco also points out, runs against the grain of Nāgārjuna and Nyāya scholarship.
5. *na pradīpa-prakāśa-siddhi-vat tat-siddheḥ*, *NyS*, p. 443.
6. Structurally the Nyāya response seems similar to what is called infinitism. Potentially we could go on providing reasons for as long as you want. Since the default is warrant at every level of challenge, the regress is not actual—as argued by Sosa 1980: 9–11.
7. *NySBh*, pp. 448–449.
8. The overall strategy is "pragmatic contradiction" (e.g., someone saying, "I am not speaking") which is distinct from propositional contradiction (*p* and *~p*) and from conceptual impossibilities ("a child of a barren woman"): see the discussion at the end of this chapter. Gaṅgeśa says in his inference chapter (Phillips 1995: 163): "It is the doubter's own behavior that proves the lie to the doubt, that blocks it (*pratibandhaka*)." See also Kisor Chakrabarti 1995: 200–203.

    Nyāya would have a similar answer, it seems to me, to the problem known as doxastic ascent, which concerns basic beliefs. Cannot any reason be challenged? There is a strong intuition to answer "Yes." Of course, classical Western foundationalism answers "No" and tries to identify beliefs that are self-warranted and in principle immune from doubt and challenge. But however basic beliefs are picked out, we would seem to be able to question why a belief should count as basic. Thus the regress resumes. If, for example, a belief is to be basic because it captures the content of an immediate experience, then why is it that capturing the content of immediate experience should count as basic? Any response would open up the regress again, and so we would ascend forever to infinity instead of descending to foundations in rock certainty.
9. See note 5 to Chapter 1.
10. B. K. Matilal (1986: 314): "Verbal reports, in Nyāya, are innocent until proven guilty." The statement is a little too strong, and I have accordingly modified the principle although I, too, have said the same thing in some earlier work. Remarkably, Uddyotakara under *NyS* 1.1.4 (p. 125) applies the principle even to philosophy: "For it is a rule with systems (of philosophy) that a position of another that is not expressly disproved (*apratiṣiddham*) is (to be regarded as) in conformity (with one's own)."
11. Partly that seems to depend on what is apperceived. Even Gaṅgeśa, who generally regards a scoped target's objecthood to be known beyond the possibility of doubt, waffles with regard to an example of a long pastry, not with regard to the objecthood of the scoped cognition or cognitions but with the questions of cognitive unity and identification of cognitive type. From the section on the mind's atomicity from the perception chapter of the *TCM*, pp. 556 and 558 (translation slightly revised):

    (Mīmāṃsaka) **objector:** How can there be (on your view) five (simultaneous) cognitions, as we find with the eating of a long pastry (where at the same time there is the pastry's touch, its sight, smell, taste, and the sound of chewing)?
    Gaṅgeśa: The five would occur in (quick) succession.
    Objector: No. For, without a prevailing counterconsideration, our sense of the simultaneity of the cognitions is (to be counted) veridical.
    Gaṅgeśa: Attention (to one thing specifically) is a counterconsideration, a defeater of apparent simultaneity. . . .
    Objector: How then (on your view) can there be the apperception, "I am (simultaneously) cognizing a smell, taste, color, touch, and sound," as with the eating of a long pastry (as apperceived)? For (on your view) the fivefold cognition would be serial such that there could be no simultaneous sensory connection with the *manas* (the internal organ).
    Gaṅgeśa: No. The unity of your "apperception" is not demonstrated. There would be (in the pastry case) precisely five apperceptions ("I am cognizing a smell," "I am cognizing a taste," and so on). Because of the subtlety (or indistinctness) of (separate apperceptive) occasions, the series or order among them is (sometimes) not grasped.

    Alternatively, due to a memory-impression left behind by (five) apperceptions that have occurred sequentially, a memory whose object is those five (past) cognitions occurs. When that memory gets misinterpreted through superimposition of (the property) experiencehood (i.e., when it is mistaken for an experience), the (pseudo) apperception, "I am cognizing (five sensory presentations) simultaneously" occurs.
12. Jayanta, for one, is pretty explicit: e.g., *Nyāya-mañjarī*, pp. 43–44.
13. Udayana, *Nyāya-kusumañjali* 5.3 (pp. 578–579) shows that the concept of the merely apparent and misleading, *ābhāsa*, extends to "suppositional reasoning," *tarka-ābhāsa*, supplementing the mainstream concept of *pramāṇa-ābhāsa*, the "pseudo-source." The most common usage in philosophy is of course the *hetv-ābhāsa*, "fallacy" or pseudo-inference, more literally, "an inference imitator that appears to hinge on a genuine prover but does not."
14. This is a corollary to the famous Vaiśeṣika thesis that everything is nameable and knowable, *PDS*, p. 37, ably debated in Shaw 1978, Perrett 1999, Krishna 2004a: 282–294, and Ganeri 2011: 175–179.

15. Kisor Chakrabarti (1984: 350–351) draws our attention to a passage in Vācaspati's *NyS* sub-commentary that makes this point, and Matilal (1986: 164–166) has an extended discussion. Vācaspati says that some inferences are so common as to be in effect self-certifying. We become so familiar in practice (*abhyāsa-daśā-āpanna*) with one thing being invariably a sign of another that we make inferences that are in effect self-confirming. From his *Nyāya-vārttika-tātparya-ṭīkā* (p. 9): *anumānasya tu pravṛtti-sāmārthya-liṅga-janmano 'nyasya vā nirasta-samasta-vyabhicāra-śaṅkasya svata eva prāmāṇyam anumeya-avyabhicāri-liṅga-samutthatvāt.* "But an inference born from an inferential mark proven through (repeated) action or another from which every bit of doubt about the mark's being erroneous has disappeared, is known of itself to generate knowledge, since that it arises from an undeviating mark is itself inferable." I take this to be an exaggeration, as the surrounding discussion makes clear: pp. 7–10. Vācaspati like other Nyāya philosophers rejects the notion of self-certification, as mentioned. But his point is that familiarity makes some inferences practically self-certifying and immune from doubt.
16. For example, Vātsyāyana under *NyS* 2.1.34 (p. 497): We perceive wholes, not atomic parts, although the sense organs are in contact with the atoms.
17. Roderick Chisholm (1942) concocts the example of a "speckled hen" (referred to by Sosa 2003: 121) to bring out a similar problem with Western foundationalist views. Probably we can see at a glance that a hen has three or even five speckles on its face (this is called *samūha-ālambana-jñāna* by Nyāya philosophers, a "group-supported perception"), taking in a precise number of things in a single cognitive moment. But could we similarly perceive that a hen has forty-eight speckles? Where to draw the line?
18. Richard Feldman (1985) breaks the problem down into a dilemma which he calls the No-Distinction Problem, on the one horn, and the Single-Case Problem, on the other. That is to say, to identify a broad process like inferring would fail to distinguish degrees of justification whereas a specifically specified process would fail to be repeatable, would not be a token of a reliable process type.
19. *Padārtha-dharma-saṃgraha* (*PDS*), translation, p. 658. Vātsyāyana has the idea, too: *NySBh* 2.1.36, p. 511. That there is a "consecutive character" (*anuvṛtti*) in identification of something as a cow is among several arguments proffered against the Buddhist *apoha* "exclusion" theory of concepts by Uddyotakara under *NyS* 2.2.64 (*NySV*, p. 667).
20. *TCM*, perception chapter, pp. 210–216 and 238–242.
21. Raghunātha, *Padārtha-tattva-nirūpaṇam*, text 49.2–4, p. 62.
22. Viśvanātha, *Muktāvalī* commentary on *Kārikāvalī*, (Shastri Sanskrit edition) verse 51, p. 419.
23. *TCM*, perception chapter, p. 327.
24. Mathurāntāha, *Māthurī* (commentary on Gaṅgeśa's *TCM*), perception chapter (ed. Kamakhyanath Tarkavagish) vol. 1, p. 538.
25. Raghunātha, we may note, attacks the thesis that all veridical cognitions divide into types of *anubhava*: *Padārtha-tattva-nirūpaṇam*, text 52.4–54.2, pp. 66–67.
26. Udayana, *Kiraṇāvalī*, pp. 161ff. See also Dravid 1972: 26–33; Kisor Chakrabarti 1975; and Phillips 1995: 60–63.
27. See, for example, in this book in the appendix (p. 126) Gaṅgeśa's express statement about analogy including perception and testimony as auxiliary causes but being an irreducible knowledge source nonetheless.
28. Udayana, *Nyāya-kusumāñjali*, pp. 237–238; Gaṅgeśa, *TCM* inference chapter (Goekoop translation), pp. 57–58; Mādhava, *Sarva-darśana-saṃgraha*, pp. 12–13.

29. For example, Vātsyāyana's commentary on the *tarka* sūtra, *NyS* 1.1.40 (pp. 321–322), mentions belief in rebirth, common to both Buddhism and Hinduism, as in tension with the (Buddhist) thesis that there is no enduring self (*ātman*). Both sides present apparently good inferences. This draws the Nyāya inferential knowledge into question. But here *tarka* re-establishes a presumption in favor of an enduring self in the face of the challenge from the Buddhist *anātman* theory: "If there were no enduring self, rebirth would be impossible."
30. I do so, for instance, in Phillips 1995. Jonardon Ganeri (2001) seems to have pioneered the translation, "suppositional reasoning," which I like and have adopted. Technically, *tarka* is classified as a kind of false cognition, one that we realize is false while it is entertained. See the chart, p. 29.
31. This is why, by the way, despite the express mention by Udayana (*Nyāya-kusumāñjali* 5.3), some Nyāya philosophers seem reluctant to admit *anukūla* "favorable" *tarka*. There need not be a false supposition. My own suppositional opinion in this regard is that there is supposition in *anukūla-tarka*, too, a holding up of one's own thesis into a subjunctive or suppositional space: "Now what if *p* were true?" Compare Nozick 1981: 176 on subjunctive conditionals and the requirements for a belief to track the truth.
32. Jonardon Ganeri (2000: 151–162) has an excellent discussion of *tarka*. I translate a long passage from Śrīharṣa and responses by Maṇikaṇṭha and Gaṅgeśa on *tarka* (1995: 151–164). Sitansusekhar Bagchi (1953) has a 300-page book devoted to *tarka* as understood in all the major schools of classical Indian philosophy.
33. Viśvanātha presents the list in a commentary on the *NyS* according to Bagchi 1953: 151.
34. For example, Udayana in his *Ātma-tattva-viveka*, (Sanskrit, ed. Dvivedin and Dravida) p. 533; another passage from another edition, *sva-vacana-sva-kriyā-sva-jñāna*, is quoted by Bagchi (1953: 178).
35. Translation from Phillips 1995: 160–161 (slightly modified).

NOTES TO CHAPTER 3

1. Under *NyS* 1.1.4, *NyVTatp*, pp. 111–120. Although Vācaspati is commonly credited with introducing the distinction into Nyāya, it is also present in his near predecessor Bhāsarvajña (also tenth century), *Nyāya-sāra*, pp. 19–21.

   It is sometimes said (e.g., A. Chakrabarti 2000) that Vācaspati introduces the concept of *nirvikalpa* into Nyāya under pressure of Buddhist thought. There may be some truth in this, as will be elaborated. But Kumārila and the *NyS* definition itself seem the more important precursors, considering the later Nyāya concept at least. For, the Yogācāra view of perception as concept-free is in the end quite distinct from that embraced by Nyāya. The Buddhist view is tied to the thesis of the object of such perception as the pure particular, *sva-lakṣaṇa*, "that which is its own mark." Nyāya has the opposite view that *nirvikalpa* picks up repeatable properties, universals, etc., although there is no awareness of their predicative role at the time, as will be discussed.
2. *NyS* 1.1.4, p. 93: *indriya-artha-sannikarṣa-utpannaṃ jñānam avyapadeśyam avyabhicāri vyavasāyātmakaṃ pratyakṣam.*
3. *NyV*, pp. 111–112.
4. Bhattacharyya 1990a: 175; Arindam Chakrabarti (2000) lists seven reasons why all perception should be viewed by Nyāya philosophers as concept-laden.
5. Kumārila, *Śloka-vārttika* commentary on the *pratyakṣa* sūtra, verse 112, of the *Mīmāṃsā-sūtra*, p. 94. Matilal (1986: 321–322) nicely illumines the surrounding passage.

6. Kumārila, loc. cit., verse 120, p. 96.
7. I take the example from Sosa 1991: 141–142.
8. Bhartṛhari, *Vākya-padīya*, ch. 1, verse 123, p. 195 ("all knowledge is twined with the word"). See also Matilal 1986: 342.
9. Gaṅgeśa, Raghunātha, Gadādhara, Jagadīśa, and company all use the sandalwood example: Gaṅgeśa, perception chapter, e.g., p. 124; Jhalakikar, *Nyāya-kośa*, p. 163; Jagadīśa, *Tarkāmṛtam*, p. 31. This is supposed to be a matter of common experience, *vyavahāra*, but it runs against the *NyS* thesis that restricts the operation of sensory organs to their proper spheres. Of course, Gautama and his commentators recognize a great deal of overlap, depending on the characteristic, earthenness, for example, being presented through all the senses whereas smells are (ordinarily!) grasped only by the olfactory organ: e.g., *NyS* 3.1.68, p. 802.
10. *NyS* 4.2.26–36. The upshot is that, first, the concept of illusion is parasitic on that of veridical experience (not all coins can be counterfeit), and that, second, illusion shows a combinational (propositional) structure—this is a something or other. Perceptual illusion is right in part, that there is something there, but wrong about what it is.

    Colonel Jacob (1925: 82–83) finds a "maxim" to this effect, which he traces in various Vedāntic and Nyāya sources: *sarvaṃ jñānaṃ dharmaṇy abhrāntaṃ prakāre tu vyatyayaḥ*.
11. Gaṅgeśa, *TCM*, perception chapter, pp. 627ff; Phillips 2001.
12. *NyS* 4.2.15, p. 1056, for instance. Mereology is a major theatre of engagement in the war with Buddhist nominalists.
13. *TCM*, perception chapter, pp. 391–392.
14. Arindam Chakrabarti (2000) gives this and other reasons for jettisoning the concept from Nyāya's own realist point of view.
15. That is, as understood by Gaṅgeśa and other Naiyāyikas. Kumārila lays out numerous arguments in the *śūnya-vāda* section of his *SV*, "On Emptiness," to refute the Buddhist position of an identity between cognized and cognizing cognition, and in verses 113–114 (Jha translation, p. 161) appears to assert that the cognizing cognition is known partly from memory, partly from perception, with an infusion—into the manifestation of a currently cognized object—of the information that is has been cognized previously. At the beginning of the section, the great Mīmāṃsaka, we might note, concedes that the self can be known as both subject and object, but not a cognizing cognition. In the *SV* section called *ātma-vāda*, "On the Self," he asserts that the self can be known by a direct cognition (*SV ātma-vāda* verses 125–126, p. 405), but not the cognizing cognition, knowledge of which requires the intermediary of an object known as cognized previously.
16. *NyS* 3.1.7–14 is the *locus classicus* for the topic.
17. Uddyotakara, *NySV*, pp. 726–736; Junankar 1978: 375.
18. The premiere Nyāya treatise on the self belongs to Udayana (eleventh century). A long book with several commentaries, the *Ātma-tattva-viveka*, "Discrimination of the Truth about the Self," is a sustained debate with a Buddhist stream theorist as the principal adversary, although other players such as the materialist Cārvāka are also engaged. (I discuss just one of his many arguments in Phillips 2005.) This may be the most diverse as well as most well-reasoned area of the whole of classical Indian philosophy. Every school takes a position replete with a barrage of arguments, many of which seem to be first aired by the Mīmāṃsaka Kumārila in his *SV ātma-vāda*. For the secondary literature, one might begin with Kuznetsova et al., forthcoming.
19. Sympathetic elaboration is to be found in Matilal 1986: 286–291.
20. This is the upshot of *NyS* 4.2.36 and commentaries.

21. *NySBh*, pp. 1089–1090.
22. Dreyfus 1997: 299–315; Dunne 2004: 45–52.
23. Asaṅga, *Mahāyāna-saṃgraha*, ch. 2, section 14, vol. 2, pp. 104–107. The point is elaborated in a Tibetan commentary translated in a footnote by Lamotte, pp. 105–106. Gods and Bodhisattvas see the "water" still differently.
24. Mādhava, *Sarva-darśana-saṃgraha*, p. 23.
25. Gaṅgeśa gives both the circularity and indifference arguments: *TCM*, perception chapter, p. 220.
26. This argument seems taken over from Advaita Vedānta and Śrīharṣa in particular: *Khaṇḍana-khaṇḍa-khādya*, p. 40; Jha translation, para. 62; Granoff 1978: 107. As remarked several times in my study of Śrīharṣa and New Logic (Phillips 1995), the later Naiyāyikas seem to include the Advaitin's text in their standard curriculum, relying on it almost like a genuine Nyāya authority.
27. Vācaspati appears to be the first to develop a response, to wit, in his comments under *NyS* 1.1.2, pp. 74–75. A more detailed response to the Prābhākara is presented by him while wearing his Vedāntin hat: in his *Bhāmatī* commentary on Śaṅkara's *BSB* (*catussūtrī*), pp. 26–31. In the longest section of the *TCM*'s perception chapter, Gaṅgeśa follows Vācaspati's exposition, using many of his images: pp. 250–326.
28. *TCM*, perception chapter, p. 259.
29. Kisor Chakrabarti 1999: 19–29 is an excellent discussion. The Nyāya mind/body position is close to that of Ducasse 1951: 402–404.
30. Non-simultaneity of cognition is a large topic in the *NyS*. Attention is one of several causal factors determining just what is cognized given that the several sense organs are simultaneously in connection with objects whereas only some of the objects are perceived. Further, any individual self is simultaneously in connection (through inherence) with a whole range of desires, pleasures and pains, and memory dispositions whereas actual remembering, feeling desire, etc., is selective and serial. See especially *NyS* 2.3.33 and commentaries, pp. 863–866. Gaṅgeśa uses the example of the loud sound trumping the power of attention: *TCM*, perception chapter, p. 563.
31. *NyV*, pp. 94–95.
32. As Gaṅgeśa puts it:

    > For different types of perception, different sensory relationships are indeed required as uniform causal conditions. (1) Substances are grasped through a connection (to the object perceived). (2) Through inherence-in-what-is-in-connection, colors (and other qualities) and motions are grasped. (3) Through inherence-in-what-is-inhering-in-what-is-in-connection, colorhood (the universal of color) and the like are grasped. (4) Through inherence, sound is grasped. (5) Through inherence-in-what-is-inhering, soundhood (the universal of sound) and the like are grasped. (6a) Through being-a-qualifier, absence of sound is grasped. (6b) Through being-a-qualifier-of-what-is-in-relation-to-a-sense-organ, inherence and such absences as of a pot are grasped. The sensory grasping (in each case) results from the *appropriate* sensory connection, not from sensory connection in general.

    TCM perception chapter, p. 343. Slightly revised.
33. Preisendanz 1989 is a detailed discussion of the Nyāya-Vaiśeṣika view of vision in the context of spelling out the failure of classical Indian civilization to develop experimental science. Halbfass 1980 shows, as Preisendanz puts it, that karmic "Unseen Force," *adṛṣṭa*, came to "serve as a joker in the explanation of otherwise inexplicable phenomena in physics in general, geology, and meteorology." But Preisendanz also herself argues that the philosophers were the main contributors to optics after a time, breaking out of some of

the constraints of the ancient *Āyur-veda* and medical literature. Gaṅgeśa, we may note, devotes an entire section of the *TCM* perception chapter to vision and light: pp. 470–488.

34. Caraka, the great medical writer, talks about the sense organs as lining up with the five material elements recognized by Nyāya: *Caraka-saṃhitā*, vol. 1, pp. 399, 403, etc. Here Nyāya conceptions seem, like Caraka's, to start off especially close to those of Sāṃkhya, although Nyāya has—and Sāṃkhya does not—an atomic view of earth and the other elements.
35. Karl Potter (1977: 168–169) has a nice discussion, featuring the work of Jayanta, of the development of the classification in both Old and New Nyāya.
36. *NyS*, pp. 1090–1091.
37. *Padārtha-dharma-saṃgraha*, pp. 392ff.
38. Phillips 2009: 131–135.
39. One of the most important passages of Gaṅgeśa's *TCM* turns on the notion of familiarity: perception chapter (and commentaries), pp. 99–105. The first time one sees something with which one is unfamiliar (*anabhyāsa-daśāyām*), for example, a river in the distance, it is possible to doubt the thing (counter the Prābhākara position). But not after confirming that it is what it is does one on a later occasion doubt that the thing, with which one is now familiar, is, say, a river. Familiarity builds confidence, and the second time one sees the river from that spot one acts unhesitatingly (*niṣkampa-pravṛtti*).
40. *NyS* 2.2.2, pp. 575–577.
41. The winning argument for Gaṅgeśa goes like this. It is simpler to view an absential cognition as a single cognition of something, the absence's locus, as qualified by the absence—all information picked up through the sensory connection with the locus—than it is to view it as the result of a whole new knowledge source or as a matter of inference. We can also analyze the knowledge as of the absence as qualificandum—which is a relational critter, joining two relata. The locus is one relatum, and the absentee (the elephant or whatever) is the other.

    There are also many other arguments, as well as several interesting examples aired having to do with a subject Caitra coming to know about the absence of Maitra at a certain location at a certain time through reflection. For my own tastes, Gaṅgeśa's section devoted to absential knowledge and combatting the arguments of Kumārila is of all sections the most fun to read, a dialectical masterpiece: *TCM*, perception chapter, pp. 407–435. See also A. Chakrabarti 1997.
42. This seems to be implicit in what Gaṅgeśa says at various places: e.g., *TCM* perception chapter, pp. 607 and 609. See also Sibajiban Bhattacharyya 1990a: 176. Arindam Chakrabarti (2000) finds this to be one more reason that the concept of indeterminate cognition should be jettisoned (or should have been jettisoned) by Nyāya philosophers.
43. BonJour 2003: 20.

CHAPTER 4

1. Oetke 2004: 175.
2. *NyV* 1.1.5, pp. 146–148. Uddyotakara is able to make this fit a common pattern by considering the river to be made up of parts, upstream and downstream parts, such that it may be conceived as a single inferential subject or *pakṣa* qualified by an observed prover, swollenness here, and unobserved probandum, being-recently-rain-fed-upstream.
3. The notion is evident, among other places, at *NyS* 1.2.5 along with Vātsyāyana's commentary, where the topic is the nature of the fallacy called "deviation," *savyabhicāra*: pp. 373–376.
4. I am grateful that so many have said so much that is illumining about this portion of Nyāya theory. The studies that have most shaped my understanding (by no means an exhaustive list of the excellent scholarship in the area): Matilal 1998; Sibajiban Bhattacharyya 1987; Potter 1977 ("Introduction"); Ingalls 1951; Staal 1973; Schayer 1933; Oetke 1996; Kisor Chakrabarti 1995; and Prasad 2002.
5. That is, according to Stanislaw Schayer (1933) and others in a reconstruction that is adequate for most purposes but not for the subtler points of New Nyāya. J. F. Staal, Charlene McDermott, B. K. Matilal, and others present more precise reconstructions representing properties occurring or not occurring at a location or site: $O(x, y) = y$ is located in x. The universe is composed of properties and property-bearers and their relations. For later authors, "occurrence" should be replaced with "qualification": $Q(x, y) = y$ qualifies x.

    According to Jonardon Ganeri (2001a, 2001b: introduction, and 2003), instead of a step of inductive generalization and use of the two rules UI and MP, the pattern can be seen to employ only a single rule of informal reasoning, as will be discussed in a later section.
6. In the more precise symbolism of Staal (1973) and others:
    1. $O(a, H)$
    2. $(x)\ [O(x, H) \rightarrow O(x, S)]$
    3. $O(a, S)$
7. *Nyāya-bindu*, p. 45.
8. Dharmottara's commentary on Dharmakīrti's *Nyāya-bindu* was long ago translated by the great Russian scholar F. I. Shcherbatskoi (Th. Stcherbatsky): see p. 47 for Dharmottara's defense of the distinction. Prasad 2002: 26–40 is thorough and penetrating in critique.
9. In Sanskrit, *jñānātmaka* vs. *śabdātmaka*: *Nyāya-bindu-ṭīkā*, p. 17.
10. But B. K. Matilal makes the summary judgment, "There is . . . no essential difference in principle between these two types of inference" (1998: 108). And Rajendra Prasad (2002: 27–28 and 39–40), perhaps noticing the Nyāya attitude but focused on Dharmakīrti and company, decides against its tenability even given Dharmottara's own assumptions.
11. Daniel Ingalls (1951: 33) says just the opposite, speaking about New Nyāya. However, he overlooks all the attention given to the parts or members (*avayava*) of a formal demonstration as well as the treatment of fallacies.
12. John D. Dunne (2004: 256–260) explains the importance of "telic function," *artha-kriyā*, a compound that is sometimes badly translated "causal efficiency" missing the meaning of '*artha*' as "aim" or "purpose."
13. The epistemological context demands that a genuine *pakṣa* cannot already be known to possess the probandum. Otherwise, we wouldn't desire to know whether it has it or not. To allow philosophical inferences to count as having a veritable *pakṣa* when we do already know the conclusion from another source (say, by perception, or apperception, which comes to be seen as a way we know the self as a substance, for example, which is also knowable by inference), Gaṅgeśa qualifies the requirement to suggest that *tarkikas* ("reasoners") sometimes desire to know something by inference just for the sport: *TCM* inference chapter, pp. 338 (p. 424 in the Calcutta edition) and 340 (431–432).

14. A more accurate reconstruction is presented by Ingalls (1951: 33ff) who has lines two and three as proto-assertions he calls ascripts not requiring full sentences.
15. Nyāya authors assume that their readers can reconstruct the *vyāpti* pattern from a mere mention of the logical terms of *pakṣa*, "subject" or "site," *hetu* or *sādhana*, "prover," *sādhya*, "probandum," and *dṛṣṭānta*, "example" (suggesting the general rule), and commonly use a three-part statement form where a pervasion is understood (not expressly mentioned).

    (part one: S*a*) An inferential subject *a* is qualified by S a probandum
    (part two: *since* H*a*) *since* that same subject *a* is qualified by H a prover
    (part three: like H*b* and S*b*), like *b* an example.

    In other words, just by indicating a prover and a probandum through such a statement, an author signals that a pervasion is asserted of the one by the other (to wit, that all loci or sites of H are loci of S).
16. Uddyotakara, *NySV*, pp. 134 and 140.
17. The inference of classical epistemologists in general, across school, argues Oetke (1996), should be understood as non-monotonic for essentially these reasons.
18. Such Cārvāka skepticism is famously reported in the sixteenth-century textbook of Mādhava, *Sarva-darśana-saṃgraha*, pp. 5–9, but is also addressed in Nyāya texts.
19. Śrīharṣa, *Khaṇḍana-khaṇḍa-khādya*, p. 345 (translation, para. 417).
20. Ganeri 2001a: 25–35 and 114–121.
21. Vātsyāyana under *NyS* 1.1.5, a case that Ganeri (2001a) discusses at length.
22. Ganeri 2001b: 20 referring to Schayer 1933.
23. McDermott 1969, Staal 1973, Sibajiban Bhattacharyya 1987, and Matilal 1998.
24. Matilal 1998: 15.
25. A refinement made by Gaṅgeśa in the section of his inference chapter on "reflection" goes like this (*TCM* inference chapter, p. 367 (Calcutta edition, p. 493):

    $(K)(\exists H)(S^{P}Ha) \rightarrow (K)Sa$

    If S knows a site *a* as having *some property or other* as pervaded by another, then S knows that *a* has that pervading property.
26. Maṇikaṇṭha Miśra, *Nyāya-ratna*, pp. 62–67. For example, from a single observation of weaving a subject can infer that the cloth to be woven out of blue thread will be itself blue: wherever blue thread, there a blue cloth. The relation of emergent causality accounts for the pervasion and the knowledge of correlation required for inference.

    Maṇikaṇṭha's example is of a pot inferred to be non-eternal because it has been produced. One could grasp the rule here just from a single thing known as both produced and destroyed, along with *tarka*.
27. Common inferences are practically self-evident, as we discussed in Chapter 2, p. 22.
28. For Gaṅgeśa on the dubious *upādhi*, see the translation by Phillips and Ramanuja Tatacharya (2002: 110–119). I now summarize.
29. These include Udayana, *Kusumāñjali* 3.2, as noted by Ingalls (1951: 104), as well as Gaṅgeśa, *TCM* inference chapter (Goekoop translation), p. 134. Gaṅgeśa nevertheless modifies the pervasion definition proffered by his "teacher" (*ācārya*), expressly rejecting Udayana's formulation, pp. 89–90.
30. Kisor Chakrabarti (1995) argues this cogently.
31. Or, possibly they are influenced by Kumārila, whose *Śloka-vārttika* contains a long passage with several arguments for a view of mutual dependence between the universal and the particular: (Jha translation) pp. 281–294. Gadādhara's *Viṣayatā-vāda*, "Discourse on Objecthood" (seventeenth century), targets the topic.

32. A couple of good examples are the Buddhist momentariness inference whose *pakṣa* is "all these things in dispute" (e.g., Ratnakīrti, *Kṣaṇa-bhaṅga-siddhi*) and an inference of Gaṅgeśa's put forth near the end of the *upādhi* section of his *TCM*'s inference chapter (Phillips and Ramanuja Tatacharya 2002, p. 130) where the *pakṣa* is all inferences that fall to an *upādhi*!
33. For a brief history of the concept, see Matilal 1968 or Phillips 1995.
34. Matilal 2002, the last chapter, "Navya-Nyāya: Technical Developments in the New School since 1300 AD," contains a lucid discussion.
35. In this way is grounded ontologically the logical rule known as transposition, which is explicitly recognized by Gaṅgeśa and New Nyāya philosophers, e.g., *TCM* inference chapter, the section on *tarka*, Tirupti edition, p. 207 (Calcutta, p. 241).
36. Raghunātha, *Padārtha-tattva-nirūpana*, pp. 60ff.
37. A substratum of a superstratum is related to it by inherence. A blue pot has the pot as the inherent cause of its blue color. Bessie is an inherent cause of cowhood. The inherent causes of a cloth are the threads of which it is woven. Substances are not the only inherent causes, since universals inhere in qualities and motions as well as in substances. Thus, a cognition, itself a quality whose inherent cause is an individual self, is an inherent cause of the universal, cognitionhood, which has multiple inherent causes, all the cognitions in the universe! An emergent cause, in contrast, is always a quality or a motion. A whole is said to inhere in its parts, and a quality that inheres in the inherent causes of something *x*, a whole, can emerge as, or "cause" (in this sense), a quality of *x* itself. Thus it is said to be the emergent cause (sometimes translated "co-inherent cause"). For example, the blue color of the threads of a blue piece of cloth is the emergent cause of the blue of the cloth. All other necessary conditions for a type of effect are said to be instrumental causes, an axe for felling a tree, etc., and the operation of a sense organ for a bit of perceptual knowledge. A cause, *kāraṇa*, is taken by default to be a necessary condition. Any necessary condition for an effect of a certain type may be inferred from the occurrence of an effect of that type, but only the presence of all the conditions together, along with the most important instrument cause, called the "trigger," *karaṇa*, makes the effect guaranteed. The trigger, sometimes translated "proximate instrumental cause" or "chief instrumental cause," is the unique condition which, on being met—after it comes along and, so to say, adds itself *in operation* to a heap of enabling conditions already in place—the effect necessarily comes about.
38. I take the example from Sibajiban Bhattacharyya (1990a) who takes it from Donald Davidson. Sibajiban's excellent essay on the New Nyāya view of causality is extensive, revealing a complex theory that deserves further exploration: 1990a: 111–138.
39. The characterization of a universal by the early Vaiśeṣika philosopher Praśastapāda is central to the mountains of later Nyāya discussion (*PDS*, Jha edition, pp. 741–742): "A universal is present pervasively in all its instances; it is identical in all its instances, of whatever number, and is the basis of the comprehension (*pratyaya*) of itself recurrently; it is the basis of comprehension of inclusion inasmuch as it subsists wholly in each of its substrates." Among the copious secondary literature targeting the topic are excellent studies by Dravid (1972) and Kisor Chakrabarti (1975).
40. Here I draw on my comments included with a translation of a section of Gaṅgeśa's *TCM* inference chapter: ed. Balcerowitz 2009.

41. Mīmāṃsā posits a special knowledge source called "circumstantial implication," *arthāpatti*, whose instances Nyāya sees as usually the same as negative-only inference. Thus about the Mīmāṃsaka's "Fat Devadatta does not eat during the day, therefore he eats at night," where F = "is fat but does not eat during the day" and G = "eats at night," Nyāya would say: Whoso F, that person G, what is not so (F) is not so (G), like Maitra (who eats during the day and not at night). This would be a "negative-only" inference so long as not only has Devadatta not been observed to eat at night but also there is no one else known to be like him in being fat and having been observed to eat only at night. We do know that he eats at night (though this has not been observed), and our inductive base is comprised only of negative correlations.

    Similarly, what Buddhists following Dharmakīrti call inferential knowledge based on identity, *sva-bhāva*, "self-nature," or, later, "internal pervasion," *antar-vyāpti*, would in many instances be interpreted in Nyāya as negative-only inference. For example, "These are trees, *since* they are *śiṃśapā* oak":

    pakṣa (subject) = *śiṃśapā* oak
    hetu (prover) = *śiṃśapā* oak
    sādhya (probandum) = tree

    Taking the subject to be specified by what it is to be a *śiṃśapā* oak means that there are no examples of the prover, which is to-be-a-*śiṃśapā*-oak, outside of the subject or site. Thus the inference has to be negative only: whatever is not a tree, is not a *śiṃśapā*-oak.
42. Gaṅgeśa makes a similar point concerning the name, "Ḍittha": Tirupati edition, p. 500.
43. Hempel 1965: 12–25.
44. *TCM* inference chapter, Tirupati edition, 442.
45. Phillips 1995 traces many of these through the great Advaitin skeptic Śrīharṣa and their influence on the development of New Nyāya.
46. *TCM* inference chapter, Balcerowitz 2009: 491.
47. Vācaspati, *Nyāya-vārttika-tātparya-ṭīkā*, ed. Thakur, p. 563 (commentary under *NyS* 4.1.21): *trayo hi bhāvā jagati bhavanti | prasiddha-cetana-kartṛkāś ca . . . prasiddha-tad-viparyayāś ca . . . sandigdha-cetana-kartṛkāś ca* | "For there are three kinds of entity in this universe: those well-known to have an agent as cause, those well-known not to, and those whose having an agent as a cause is in doubt."
48. It appears in Mokṣākāragupta's twelfth-century textbook, *Tarka-bhāṣā*, p. 98.
49. Vācaspati, *NyVTatp*, ed. Thakur, p. 566.
50. ibid., p. 566.
51. *Yoga-sūtra* 1.26. Camille Bulke (1947: 27) opines that Vācaspati follows the *Yoga-sūtra* here.
52. Vācaspati on why it is that it is the *īśvara* that must be supposed to be the agent inferred: "(That which is to be accounted for) is the simultaneity of production of effects throughout immeasurable and unlimited space at every place and location, effects perceptible and imperceptible in animals and plants and the organic world as a whole and so on." *NyVTatp* on *NyS* 4.1.21, ed. Tarkatirtha et al., p. 954; ed. Thakur, pp. 564–565.
53. *TCM* inference chapter, Tirupati ed., vol. 2, p. 420; Calcutta ed., vol. 2, p. 177.
54. We might note briefly that for Nyāya to be liberated is not to be like a stone, contrary to the charge of Vedāntins. Nyāya takes a non-cognitivist view of pleasure and pain or suffering, which have no intentionality or "objecthood," *viṣayatā*. Pleasure and company are instead objects (*viṣaya*) of internal perception. Thus a hedonic event would be simultaneous with a cognition that grasps it, the two being in different streams of qualities (*guṇa*) that inhere in or qualify an individual self. Strikingly, Gaṅgeśa implies that the liberated somehow know they are free from future suffering. Somehow, one can know one's self as qualified by destruction of suffering, etc., as per a definition he gives. Thus cognition of such an absence of future suffering has to be compatible with liberation. This is then one instance of positive content. Presumably there would be more. Gaṅgeśa and Nyāya in general, with a few exceptions (notably Udayana), subscribe to the possibility of "living liberation." The living liberated rather obviously have some sort of consciousness.
55. *Bṛhadāraṇyaka*, the third and fourth *brāhmaṇa*s of the fourth chapter. Phillips 1995: 39–41 takes up the Upanishadic passage and debate in Nyāya.
56. Solomon 1976.
57. *Mahābhārata* 12.320.78ff. Ester Solomon identifies and discusses the passage: 1976: 26–28.
58. Matilal 1998: 2.
59. *NyS* 1.2.2–3 and 4.2.48–51, pp. 356–361 and 1097–1099. This is noticed in Hamblin 1970, which is one of the first discussions by an analytic philosopher of the *NyS* list of fallacies and futile rejoinders.
60. Vācaspati under *NyS* 1.2.1 says that a person of good character may put forth tricky arguments, with unfounded premises, when an opponent (showing bad character) *first* uses tricky arguments: *NyVTatp*, p. 339. Compare this to a no-first-strike policy with nuclear weapons.
61. *NySBh* 1.1.1, p. 44. This in itself comes to be counted as an argument against a presumed "refutational" (*prasaṅgika*) anti-philosophy of Nāgārjuna and followers.
62. For detailed support of this judgment with reference to a couple of dozen fallacies commonly identified, see Matilal 1998: 60–87. Other good treatments include Bandopadhyay 1977 and Gokhale 1992.
63. Kisor Chakrabarti 1999: 8–12.
64. It is significant, I think, that in later Nyāya the inference to self is considered dispensable in that we know *ātman* directly, i.e., perceptually, as expressed in such statements as, "I am having pleasure," "I am having pain," "I am perceiving, inferring, etc., that . . . ," and so on. Later authors make the argument apparently following Kumārila in the *Śloka-vārttika* section on *ātman*, Jha translation, pp. 401–407. Prior to the copious arguments of the Mīmāṃsaka, however, Uddyotakara claims against the Buddhist *anātman* theory that there is direct perception of the self, which is apparently expressed in such avowals although not in sentences verbalizing false identifications of self, e.g., with bodily attributes: see in particular *NySV*, p. 705, under *NyS* 3.1.1, Jha translation, p. 1081, for a summary statement, as well as Taber (forthcoming) who reconstructs a supporting inference of Uddyotakara's to the conclusion that the self is known perceptually in case we have any doubt. The first-person pronoun refers to the self and the pains, pleasures, and cognitions picked out are its properties. We do not observe the whole self when we observe it apperceptively as having a particular pleasure, just as we do not observe the backside of Devadatta when we encounter him on the street while nevertheless knowing the person perceptually. Similarly, with the theological inference there is supposed to be (Vedic) testimony also in favor of God's existence. And the *mukti* inference, too, is supposed to back up, or be backed up by, yogic testimony, although this presents a problem on some conceptions of *mukti*, as Uddyotakara points out: *NySV* introduction to *NyS* 1.1.2, p. 67.

    This is, by the way, called the doctrine of *pramāṇa-samplava*, "coalescence of sources," which Nyāya accepts (with qualifications) but other schools,

especially Mīmāṃsā and Vedānta in their desire to defend the authority of scripture, reject (each *pramāṇa* viewed as having its own proper scope or range). Thus Vedāntins tend to reject rational theology since inference would compete with scripture.

65. Chemparathy 1972 carefully reconstructs the "clusters of arguments" Udayana puts forth in his *Nyāya-kusumāñjali*. But both there and in his *Ātma-tattva-viveka* there remain many unmined bits of *tarka* and formal inferences.

NOTES TO CHAPTER 5

1. Kumar 1980: 110.
2. The word 'heaven' ('*svarga*') is said to be derivative (*yoga*), involving a narrowing of the meaning of 'pleasure', '*sukha*', or '*su*' in '*su*' + '*arga*', as Gaṅgeśa himself tells us in his *TCM* chapter on analogy, addressing himself to Mīmāṃsakas (p. 122). Nevertheless, cognizing similarity to earthly pleasures is crucial to the concept, it is recognized on all sides.
3. Two sūtras, *NyS* 1.1.34 and 1.1.35, expressly mention similarity (*sādharmya* = *sādṛśya*) and dissimilarity (*vaidharmya*) in characterizing a proper prover in the inferential context. The notion of "relevant similarity" is introduced a little later, *NyS* 1.2.18, where a "futile rejoinder" is defined as an objection based on superficial similarity or superficial dissimilarity. See also, in the appendix to this book, p. 112, an express statement from Gaṅgeśa that knowledge of similarity is crucial to inference.
4. Not requiring the surety that would come from perceiving all the F-instances through sensory relation with the F-hood universal, we can and do defeasibly cognize a pervasion relationship, *vyāpti*, between two properties F and G, says Maṇikaṇṭha, *Nyāya-ratna*, pp. 62–67, as mentioned in a previous note (Chapter 4, note 26). The standard view is that repeated observations are required, *bhūyo-darśana*. Maṇikaṇṭha argues that the *bhūyo-darśana* notion is vague and misses the main point, which is that through the aid of "suppositional reasoning," *tarka*, the causal relationship between things F and G can be made manifest without a lot of cases or experience. Gaṅgeśa accepts some but not all of Maṇikaṇṭha's reasoning and stresses, contra his predecessor, that a pervasion can be known without *tarka*. Otherwise, there would be an infinite regress, since successful *tarka* presupposes knowledge of pervasion: *TCM* inference chapter (Calcutta), pp. 210–212.
5. *NySBh* 1.1.6, pp. 170–171.
6. The term is introduced otherwise, suggests Gaṅgeśa (see in the appendix to this book, p. 121). Apparently, there can be no analogical knowledge of the meaning of '*īśvara*' since that would require direct perception and the Lord's existence is *atīndriya*, "beyond the range of the senses."
7. Bhāsarvajña, *Nyāya-sāra*, pp. 103–110. See also Narayanan 1992 and Kumar 1980.
8. *NyS* 1.1.6 and 2.44–48 and commentaries, pp. 168–172 and 527–533.
9. Compare Michael Dummett (1978: 122), from the essay, "Frege's Distinction between Sense and Reference": " . . . a speaker may understand a complex expression without knowing its reference—he knows the references of the component words, and knows how they jointly determine the reference of the whole, but does not actually know what that is."
10. *NyS* 2.1.47, p. 530.
11. *NyS* 2.1.48, p. 531.

12. The example becomes famous in the writings of the Mīmāṃsakas. Kunjunni Raja (1969: 26–28) traces it in both Prabhākara and Kumārila as well as in the grammarian Nāgeśa Bhaṭṭa (early eighteenth century). Gaṅgeśa disputes the Prābhākara view in particular of how we learn the meaning of words, but agrees that the original or primary way we learn is from our elders' discourse: *TCM* testimony chapter, Calcutta ed., vol. 2, pp. 460 and 463 (badly translated by Bhatta, vol. 2, p. 645). Viśvanātha changes the example to a child's observing an elder bringing a jar when asked, (Madhavananda translation) p. 152, and there are other variations all of which appear to be forms of ostension (or training).
13. Kunjunni Raja 1969: 59–63.
14. Ganeri (1999: 31–38) examines at length the Nyāya notion of a verbal convention, which he calls a mandate, rendering '*icchā*', literally "desire" or "will." The standard Nyāya view is that, except for naming and introduction of technical words in a science or system (*paribhāṣika*), the Lord, *īśvara*, sets the conventions.
15. K. Kunjunni Raja lucidly discusses these matters: 1969: 59–69.
16. *NySBh* 2.2.62, p. 671.
17. As mentioned earlier, this comes to be called *eka-vṛtti-vedya*, "that which is to be known in a single (cognitive) occurrence," applied here to testimonial knowledge as mediated by word meaning.
18. *TCM* testimony chapter, (Bhatta translation) vol. 2, pp. 715–720, in particular.
19. This is mentioned by Gaṅgeśa in several places, e.g., in the appendix here, p. 121. Raja however, following Mathurānātha, leaves out technical stipulation in his list of eight ways words are learned: 1969: 26–31.
20. A couple of the ways listed by Mathurānātha seem to be forms of testimony: (1) usage of elders, (2) testimony, (3) derivative grammar, (4) analogy, (5) dictionaries, (6) semantic sentential context, (7) written commentaries providing synonyms, and (8) syntactic sentential context.
21. *TCM* testimony chapter, (Bhatta translation) vol. 2, pp. 656–659. Here Gaṅgeśa says that at first the child does not discern the individual words but takes the sentence as a whole to mean that the cow should be brought. Later, by hearing the words used in different contexts, the child learns to individuate words.
22. The correlative pronouns 'that' and 'which' ('*yat*' and '*tat*') are said by Gaṅgeśa to work similarly (p. 131): "The grasping of their referential power is by indication (*upalakṣaṇa*) according to what has been set in the mind and so on, which happens in common (for all things potentially referred to pronominally, a pot, a cloth, and so on)."
23. Mill 1843: 30–40.
24. *TCM* perception chapter, pp. 652–653.
25. Gaṅgeśa quotes Udayana on the difference between a true qualifier and a mere indicator (*TCM* perception chapter, p. 654):

    Our revered teacher (Udayana) has said, "Whether an existent or a non-existent, a qualifier is a differentiator that has the same locus as the thing cognized. An indicator has a different locus." What he means is as follows. A qualifier makes known an exclusion occurring in precisely the locus of that qualifier. That is to say, a qualifier makes known an exclusion whose locus is specified by that qualifier.

    After being cognized, both qualifiers and indicators make known a differentiation that obtains at a particular locus. But crows mentioned to point out Devadatta's house do not distinguish Devadatta's house with respect to things that do not have crows but rather with respect to things that are not houses.

The quotation is from Udayana's *Tātparya-ṭīkā-pariśuddhi* commentary under *NyS* 1.1.4: p. 145.

NOTES TO CHAPTER 6

1. *TCM* testimony chapter, p. 276.
2. *NyS* 2.1.68, p. 565: From the certified status of the *Āyur-veda*, which concerns health, it is inferred that the other parts of the Veda, which concern heaven and the like, are also true. Taber 2009 explores the argument.
3. Philosophically, Mīmāṃsā can be reconstructed around the (plausible) argument (*Mīmāṃsā-sūtra* 1.1.5) that *dharma*, "righteousness," as a matter of what we ought to do, not of what is being or has been done, falls outside the province of perception and therefore also of inference. The revealed Word, which is injunctive in character, fills the role, making us know what we should and should not do.

   The key connection between a Mīmāṃsā injunctive theory of meaning and an indicative theory belonging to Nyāya is brought out by Arindam Chakrabarti (2006: 35–38). The essential point is that the schema of qualificandum qualified by a qualifier can be used to parse the meaning of injunctions as well as of straightforwardly factual propositions, both embedded in speech acts. Chakrabarti analyzes the injunction, "Bring the cow":

   Q(you, Q*(agency, Q(bringing, Q(accusativeness, cow))))

   where 'Q*' is a "special intentional qualification" of the person being asked to bring the cow.
4. *āpta-upadeśaḥ śabdaḥ*, *NyS* p. 173.
5. *NySBh*, pp. 173–176.
6. Under *NyS* 3.2.58, which concerns the rapid movement of the sensory mind or *manas* as accounting for the apparent simultaneity of sensory awareness, Vātsyāyana explains cognition of sentence meaning as a similar phenomenon where we only seem to get it all at once: *NySBh*, pp. 897–898.
7. J. N. Mohanty (1994: 31) elaborates lucidly overall but says mistakenly that the utterer (S) has to be *known* by the hearer (H) to be competent. For certification, perhaps, S may need to be known by H to be competent, but not for first-level testimonial knowledge, *śābda-bodha*. The mistake is repeated in Mohanty 2000: 25.
8. *TCM* testimony chapter, vol. 1, p. 329: "Without knowing the sentence-meaning first, it is not possible to ascertain the speaker as not . . . confused."
9. Chakrabarti 2006. Also, is there really such a shift? The reason that Gaṅgeśa and company spend more energy on hearer conditions and sentence meaning than on what it is to be an expert, *āptatva*, may be that it seems on the topic of *āptatva* there remains, after Vātsyāyana et al., not much left to point out.
10. *TCM* testimony chapter, vol. 1, p. 316.
11. *TCM* testimony chapter, vol. 1, p. 140, *tātparyyādhīnaṃ śabda-prāmāṇyaṃ* (the Sanskrit text, badly translated by Bhatta, and now retranslated:) "The knowledge-source status of testimony depends on the intention of the speaker."

    We might remark that if the parrot were like a tape-recorder Nyāya would accept the knowledge-status of H's belief. It's not an accident that the parrot says what it says. But the deceived deceiver case is a matter of purely accidental truth which is not *pramāṇa-ja* and thus not knowledge.

    Or, maybe a case could be made that it is not an accident, that the truth, so to say, breaks through the intention to deceive. Then there could be knowledge (though I think it would be inferential not testimonial).

    Imagine that Desdemona does indeed love Cassio but Iago believes she does not (her behavior is exactly as though she does not, as in the play). Cassio for his own purposes tries to lie to Othello that Desdemona loves Cassio, which in this case is true. The truth breaks through to Othello despite its being through the medium of a deceived deceiver. However, I do not think that Gaṅgeśa or any Nyāya philosopher would accept this as a case of knowledge. Note that if Othello knew that Iago was out to deceive then belief about Cassio would be blocked, prevented by that knowledge, but not if Othello also knew that Iago was deceived (Othello having, so to say, the God's-eye point of view).
12. *TCM* testimony chapter, vol. 1, p. 329.
13. Under *NyS* 2.1.49–52, pp. 534–539 including the commentaries. Mohanty 1994 illumines the passage.
14. Jayanta Bhaṭṭa sums it up (*Nyāya-mañjarī*, p. 322): "The conditions that determine inferential knowledge and those that determine verbal knowledge are not the same."
15. Mohanty 1994: 34; *TCM* testimony chapter, vol. 1, pp. 277–348 (the Vaiśeṣika refutation); Vātsyāyana, *NySBh* 2.1.20 (translated here, p. 17).
16. Vācaspati, *NySVTatp* (Dravid edition), pp. 201–207, referenced by Mohanty 1994: 49.
17. Hume's focus is on the overall evidence for or against a claim (of a miracle) attested by testimony, not on the epistemology of testimony itself. But he sees the trustworthiness of testimony as founded on the inductive generalization that what people tell us is (normally) true. Consonantly, "a man delirious, or noted for falsehood and villany, has no manner of authority with us." Hume 1748: 84–85.
18. Price 1969: 112–129.
19. Strawson 1994: 27.
20. Graham 2006: 93.
21. *NyS* 2.2.58–69, pp. 654–695, including the commentaries.
22. *NySVTatp*, p. 683; see also the note by Jha to his *NyS* translation, vol. 2, p. 1035.
23. "(This is) Devadatta" is analyzed as a bit of knowledge like "(This is a) cow": a qualifier, being-named-Devadatta, qualifies an individual qualificandum: see, e.g., Sibajiban Bhattacharyya (1990a: 162) referring to Gadādhara's theory. Similarly, cowhood qualifies Bessie. There is of course the metaphysical difference that Devadatta could have another name and remain the same person whereas Bessie cannot lose her cowhood while she is alive. But the present point is not metaphysical but has to do rather with how the cognition's intentionality ("objecthood," *viṣayatā*) is to be analyzed.
24. For example, Kumārila, *Śloka-vārttika* (Jha translation), p. 506 (verse 121 of the section on the sentence, under *Mīmāṃsā-sūtra* 1.1.24), "Words . . . are capable of making up an endless number of sentences."
25. Siderits 1991.
26. Adverbs do not carry grammatical terminations but are just in that absence counted as inflected, too.
27. Gopinath Bhattacharya writes àpropos Annambhaṭṭa's discussion of the two Mīmāṃsaka theories (*Tarka-saṃgraha*, pp. 301–302):

    > It comes to this then that the understanding of a statement, i.e., of what is signified by the constituent terms in relation to one another, depends among other things on the presentation of the terms *in the required order*. But the order of arrangement of the terms is not itself a term of the sentence, so that it cannot be said that this order has its own *śakti* like the terms.
28. Siderits 1991: 40. Gaṅgeśa expressly addresses the objection that on his view a sentence would be indistinguishable from a word list: *TCM* testimony

chapter, pp. 356–357. The answer is again that though a sentence does not mean separately a relatedness (*anvaya*)—it means just the things meant by the individual words—there is a relatedness among the things referred to, a relatedness reflected in how the sentence structures the meanings. The relatedness is supposed to be an ontological free lunch, like the self-linking nature of inherence and other qualificative relations. Phillips 1995: 134–137 discusses this; see also Potter 1961.

29. Siderits (1991: 103–110) speculates that Buddhist philosophers, who are almost silent on these issues, would align themselves with the Prābhākara holism. But note that on other issues it is Nyāya that is holist, opposed to nominalist reductions proposed in particular by Buddhists. And indeed there is, despite the official position that a sentence's meaning is constituted by the meaning of its words, a holism here with the Bhāṭṭa/Nyāya theory, the holism of sentence meaning, which Nyāya views as not just a sum of the referring parts, the constituent words. The sentence as a whole draws our attention to a certain relatedness.
30. Kumārila mentions "context," *prakaraṇa*, textual context, as crucial to removing vagueness in understanding mantras: *Tantra-vārttika*, pt. 2, pp. 1155–1158. As we noted in the previous chapter, Vātsyāyana mentions *prakaraṇa* for determining precisely what a word means.
31. Kunjunni Raja 1969: 149–169.
32. This point is expressly made by Gadādhara in his *Vyutpatti-vāda* according to Ramanuja Tatacharya 2005: xxxv (and in Sanskrit, p. 425), who does not give a more specific reference.
33. Grice 1975. "Do not speak nonsense" would appear to be a "maxim of quality" akin to Grice's "Do not say what you believe to be false."
34. Kunjunni Raja 1969: 164–166.
35. *TCM* testimony chapter, vol. 1, pp. 372–373.
36. Arindam Chakrabarti 2006: 48.
37. *TCM* testimony chapter, my translation, Bhatta edition, IV.iii.6, vol. 1, p. 136.
38. Compare Wittgenstein's remarks on Moorean statements of certainty: Wittgenstein 1969, paragraphs 111–153.
39. Gaṅgeśa, *TCM* testimony chapter, vol. 1, p. 294.
40. Uddyotakara, *NySV* 2.2.62, p. 664.
41. Kunjunni Raja (1969: 166) reports this as the Nyāya position, but, as we shall see, that's not precisely correct.
42. Gaṅgeśa makes the point: *TCM* testimony chapter, vol. 2, pp. 794–795.
43. S. Bhattacharyya 1990a: 33–34.
    Edwin Gerow (2001: vi) points out that a "figure" for the Sanskrit rhetoricians is "a mode of thought, a way of formulating or conveying an idea, which has closer relations with logic than with grammar, or even semantics."
44. *NyS* 2.2.62, pp. 663–664 including the commentaries.
45. In the later *alaṃkāra-śāstra*, figures are divided into those where the relation is similarity, called *gauṇī*, "secondary (figurative speech)," and a miscellaneous collection of relations other than similarity, called *śuddhā*, "pure (figurative speech)," e.g., in Appaya Dīkṣita, *Vṛtti-vārttika*, p. 32. The former is admitted as still another power of words by some Mīmāṃsakas, according to Kunjunni Raja 1969: 240–241.
46. *TCM* testimony chapter, my translation, Bhatta edition, IV.ix.42, vol. 1, p. 232: *vākya-artha-anvaya-anupapattyā*, "by the impossibility of the connectedness of the sentence meaning (without understanding a figurative sense)."
47. *TCM* testimony chapter, vol. 2, p. 794.
48. Annaṃbhaṭṭa, *Tarka-saṃgraha*, pp. 294–295.

49. *TCM* testimony chapter, vol. 2, pp. 802–803.
50. Kunjunni Raja 1969: 262–264.
51. The neo-Vedāntic view popularized by Swami Vivekananda (1863–1902) is that the Veda resounding in the cosmic ether (*ākāśa*) was heard and memorized (in this cycle of creation) by great *ṛṣis* in their pellucid consciousness (not cluttered by ordinary thought). This seems a concession to the Western concern with history, but is not out of line with how at least some Naiyāyikas think. Classical Mīmāṃsā, however, unlike Nyāya, does not endorse the view that the universe (or the Veda) has an origin. "Just like us, just like now" is Kumārila's position on earlier generations' possession of the Vedic corpus. They got it, just like us, from their ancestors, in immemorial lineages. See McCrea (2009) who cites Kumārila's aphorism and explores the Mīmāṃsaka's arguments.
52. Gaṅgeśa, *TCM* testimony chapter, vol. 1, pp. 290–291; Annaṃbhaṭṭa as interpreted by Lakṣmīnṛsiṃha (according to a note by Gopinath Bhattacharya), *Tarka-saṃgraha*, p. 306.
53. Annaṃbhaṭṭa, *Tarka-saṃgraha*, pp. 289–293.
54. This is clearly evident in the case of irony or "crooked speech," *vakrokti*, e.g., "Your kindness is celebrated," said by a lady to her lover whom she knows has made love to her messenger: Appaya Dīkṣita, p. 68, last line. (Gerow 1971: 286 has this classified as *vyāja*, "pretense.")
55. Ānandavardhana, *Dhvanyāloka*, p. 83: "Go your rounds freely, gentle monk;/the little dog is gone./Just today from the thickets by the Godā/came a fearsome lion and killed him." This is said in a play where the speaker communicates (to the audience, not to the monk) that she plans to meet her lover "in the thickets by the Godā" and does not want the monk to disturb them.
56. Annaṃbhaṭṭa, *Tarka-saṃgraha*, p. 291.
57. Annaṃbhaṭṭa, *Tarka-saṃgraha*, p. 293.
58. Ānandavardhana, *Dhvanyāloka*, p. 132 (*dhvani* is equated there to "apprehension of beauty").

NOTES TO CHAPTER 7

1. Lehrer 1990: 169–172.
2. Armstrong 1973, Lehrer 1990, and BonJour 2003. Armstrong (1973: 171–175) worries about cases of veridical hallucination as possibly undermining his "thermometer" account of non-inferential knowledge, acknowledging the difficulty of spelling out the lawful relation between the fact that *p* and the belief that *p*. The "Truetemp" objection to Armstong's causal view is formulated by Lehrer (1973: 162–164).
3. BonJour 2003: 28–33.
4. Nozick 1981: 179.
5. There is much to say about the relationship of bits of knowledge generated from different sources. Does apparent inference trump apparent perception? Surely not in all cases since sometimes we confirm inferential results perceptually. Nyāya, unlike Vedānta in particular, accepts the principle of *pramāṇa-samplava*, which says that the same fact can be known in multiple ways. Thus there is the possibility of source dispute, a phenomenon recognized by Nyāya philosophers who do not come up with, however, so far as I can tell, general rules. (Maybe there are none.) To be sure, it is often said that perceptual evidence is the weightiest (but how about for the movement of the sun, which is mentioned by Vātsyāyana himself?). Further, one source can certify the output of another source. This is another side

of the *pramāṇa-samplava* doctrine. But the full ramifications of this plank of the theory Nyāya philosophers fail to explore, in my opinion. Accepting *pramāṇa-samplava*, they are perhaps too sanguine about the unlikelihood of *pramāṇa* conflict.

6. Nozick 1981: 681n9 traces the case to Carl Ginet. Philip Quinn elaborated it in comments on presentations made by Arindam Chakrabarti and myself at the American Philosophical Association Eastern Division meeting in New York, 2000.
7. Another case, due to Gilbert Harman (1968: 172, referred to by Pollock 1986: 190 and reworked by Nozick 1981: 177), seems similar though it is geared to bring out the "social dimension of knowledge" (a point Harmon attributes to Ernest Sosa 1964 and with which Nyāya would agree, it seems to me). By Nyāya lights the case of the "dead dictator," as it may be called, is not knowledge however for the simpler reason that there is no genuine testimony. Our subject S, who lives in a country where a practically all-powerful dictator rules, reads the early-morning edition of the local newspaper whose headline is: "Dictator Dead" (with some name substituting for 'dictator'). The dictator is in fact dead. The dictator's henchmen realizing that they do not want the public to know that the dictator is dead force the paper to print a retraction. S walks into a room where there are twenty people all of whom have read the second edition and do not believe that the dictator is dead. Before entering the room and talking with the people, S would seem to have justified true belief that the dictator is dead, although she will be shaken off the belief after a minute in the room. Does S *know* that the dictator is dead just before she walks into the room? Those who answer no apparently feel that veritable knowledge should be better rooted psychologically. By Nyāya's lights, the newspaper story is not a source of knowledge in the first place since no newspaper in a dictatorship could meet the requirements of "trustworthy authority," *āptatva*.
8. A legitimate challenge undermines a position's status as knowledge even if it is true and we have good reasons for holding it, according to the *NyS* and commentaries. This then becomes an occasion for the employment of *tarka*, much like the *elenchus* of Socrates.

   Thomas Kelly (2005) distinguishes epistemic peers from epistemic inferiors and superiors, and defends what he calls epistemic egoism with respect to disagreements among peers. Peerage seems to be the attitude taken by most Nyāya philosophers towards their Buddhist and Mīmāṃsaka adversaries in particular (though not towards everyone, for example, Cārvāka, who is by *tarka* humiliated).
9. Pingree 1981: 56–66.
10. Raghunātha, *Padārtha-tattva-nirūpaṇam*, pp. 86–87. Lucid discussions of the late Nyāya views of counting and number may be found in S. Bhattacharyya 1987, Perrett 1985, and Ganeri 1996.
11. Cassam 2007: 189; Burge 1998; and Goldman 2002.
12. Cassam 2007: 190.

NOTES TO THE APPENDIX

1. A red truck and a red tomato would have little in common other than color.
2. I translate '*sāmānya*' as "universal" although the Prābhākara dos not mean here that similarity is a universal as Nyāya philosophers understand universals. Other acceptable translations are "natural kind," "class character," and "commonality."

3. According to Kṛṣṇakānta (Calcutta, p. 19), D[1] is attributable to the Bhāṭṭa Mīmāṃsaka, distilling, apparently, Kumārila's *Śloka-vārttikā* under sūtra 1.1.5, section 7, verses 18–21, (Jha translation) p. 225.
4. "Thus it has been said" is taken by the commentator Pragalbha to imply that there is agreement between the Prābhākara and his Bhāṭṭa objector about the verse's thesis.
5. Occasionally throughout the *TCM*, Gaṅgeśa expressly mentions "New" (*navya*) Prābhākaras who propose views slightly innovative relative to those of Prabhākara himself and of his close followers such as Śalikanātha Miśra.
6. The idea seems to be that pleasures are too different from one another to instantiate a single pleasure universal, unlike, say, cows. Gaṅgeśa appears to hold that there are fundamentally distinct pleasure kinds and that "pleasurehood" is not a genuine universal.
7. This is a thorny passage. The commentator Kṛṣṇakānta (Calcutta, p. 37) understands the compound '*kāraṇa-viśeṣa-prayojyā*' ("directing a particular cause") as *vihita-kriyā-viśeṣa-prayojyā* ("directing particular ordained actions"). He glosses Gaṅgeśa as saying that enshrined in everyday speech is the idea that there is similarity in the actions that are enjoined by scripture as well as in the pleasures produced. The same goes for the pains produced by sins. There are universal laws of karma, not mediated by generational considerations, as we might say today.
8. On an alternative reading of the Calcutta edition, there is '*dvayor*' instead of '*pralaye*': "universals remain even when the two are destroyed." The "two" would be the two particulars already mentioned. Universals endure the destruction of individual instances, even of all instances so long as there have been instances. Nyāya, it seems to me, embraces a realist view about the past.
9. Having completed his discussion of the ontology of similarity, Gaṅgeśa now takes up analogical knowledge (*upamiti*) as his principal topic through the voice of a new adversary. The new principal objector, objector.1, may be understood, following the commentaries, as a Bhāṭṭa Mīmāṃsaka, from the school of Kumārila and company, who eschews similarity as a separate category, like Nyāya, but, unlike Nyāya, accepts non-perception as a separate knowledge source, the source that makes us know absences.
10. Kumārila himself addresses Nyāya's view of analogy, *Śloka-vārttika*, (Jha translation) pp. 222–230, and the Nyāya-promoted scenario of a subject S learning from a forester enough to know in his encounter with a *gavaya* buffalo that it is called what it is. Note, however, that the proposition known will concern, in the Bhāṭṭa's mouth here, the cow, not the *gavaya*, as with Nyāya.
11. See in this book p. 63 for an explanation of the connection to which the Naiyāyika refers. In brief, this is a type of sensory connection, specifically a connector that allows us, according to the theory, to have a grasp of future instances of a universal, cows not yet born. The nature of the connection is "peculiar to universals," *sāmānya-lakṣaṇā-pratyāsatti*, so it is said.

   The voice of the main opponent appears now to be different, not that of a Bhāṭṭa Mīmāṃsaka as just above, but rather a Nyāya philosopher of the Old school. The commentator Kṛṣṇakānta identifies the voice as Old Nyāya (Calcutta, p. 55) with respect to Gaṅgeśa's use of the word "our" (*asmāka*) in talking about what "they" (the Mīmāṃsakas) call "circumstantial implication" (*arthāpatti*). And definitely there is a change of voice for the principal opponent. The question is precisely where? Earlier, circumstantial implication was said to be "our" (Bhāṭṭa) view which "they" the Naiyāyikas see as the form of inference they call "negative only." So if it is not a new principal

opponent that we have here, then the change occurs with "That's contemptible" (*vigarhitam etat*) a little below.

12. The "opposed terms" of which the objector speaks are, for example, Devadatta as qualified by thisness, i.e., his being present before our subject S, and the same Devadatta as qualified by thatness, e.g., his being encountered by S yesterday in the market.
13. It's hard to determine who the "they" refers to in "so they say," apparently fuzzy-thinking Mīmāṃsakas. The objector is probably intended to be thought of as a Mīmāṃsaka who cites mindlessly a maxim of his teachers. The objection in the next passage probably belongs to Old Nyāya. Just a little later, Gaṅgeśa himself (not just his commentators) mentions Jayanta Bhaṭṭa (ninth century) and Old Nyāya.
14. Here I follow the Calcutta edition as the Varanasi edition drops the word for elephant such that it would be cognitions that are known perceptually to be mutually similar.
15. If only as combined A and B can do their work, then their combination cannot be a causal factor for A or for B.

    The time delimitation mentioned is supposed to be a matter of the difference between (a) S's hearing the analogical statement at t_1 and (b) seeing the *gavaya* buffalo at t_2 and having the bit of analogical knowledge.
16. This is to follow the Calcutta edition which has '*kathora-śūka-āśinaṃ*'.
17. Having pointed out what's wrong with the Old Nyāya theory—all in all a rather minor oversight—Gaṅgeśa articulates now a fully adequate view in a *siddhānta* of New Nyāya.
18. "Ether," *ākāśa*, is posited in the technical terms of the Nyāya-Vaiśeṣika ontology as the medium of sound although we do not directly experience it. Sound travels and so must have a carrying substratum connecting things that are making sounds with the audial organ located in the ear canal.
19. Etymological explanation does not entail that the action of the root from which the word is derived is actually occurring. Thus we can use the word 'cook' for a person who is not currently cooking.
20. The Calcutta edition adds '*api*' after '*agre*'.
21. On Gaṅgeśa's view, the cow-similarity cognized by S upon encountering a *gavaya* buffalo is not known at the time of S's comprehension of the analogical statement. This view is tied to the supervenient nature of the similarity according to him.
22. A stock example of indirect, figurative meaning, "The village is in (the water of) the Gaṅgā," contrasts the literal meaning, "The village is built on the water of the river," which is known to be impossible, with the intended, metaphorical meaning, which is to state the village's proximity to the sacred river and to suggest that it has a meditational atmosphere, as is discussed in this book in Chapter 6.
23. Gaṅgeśa points out that it is the *gavaya* buffalo that is referred to in both the subject and predicate parts of the sentence that verbalizes S's knowledge. The subject expression and the predicate expression, which are appropriately in the same case, both pick out the *gavaya*.
24. Intended meaning, in objector.1's conception, includes unexperienced instances of universals such that when the class character has been comprehended by S, the individual *gavaya* (or whatever), though not yet encountered, is known in a way.
25. The mutual dependence would be using analogy to explain a bit of knowledge that can be explained otherwise, and then turning around and using the example and its explanation as a reason for positing analogy.

26. S knows that the word '*gavaya*' is a noun from overhearing "students"—a word, we may remark, that contrasts with the "elders" of the stock Mīmāṃsaka example where one learns through the ostensions of one's elders, the authorities. The Sanskrit word for "student" is '*śiṣṭa*', "one who is taught."
27. The objector puts forth a "negative-only inference" (*a* is S, because it is H, whatever is not S is not H).
28. In the *NyS*, three main types of inference are differentiated according to the relationship between the inferential terms and how that relationship is evident. The *sāmānyato-dṛṣṭa* type of inference is said to work on the basis of knowledge of common characteristics, as opposed to causality with the other two. It has a conclusion that is in fact not known by current perception, like all inferences, but also, unlike the other varieties, an imperceptible conclusion, such as "The sun moves," which is known although no one ever directly witnesses the motion. Later there is much dispute about the inference type, and the concept is more or less dropped by New Nyāya philosophers such as Gaṅgeśa in favor of a different classification. See in this book the third section of Chapter 4, "The ontology of pervasion."
29. The Nyāya inference to a self is given extensive treatment by Gaṅgeśa in the "negative-only" section of the inference chapter of his *Tattva-cintā-maṇi*. See the fourth section of Chapter 4 here, "Philosophical inferences to the self, God, and *mukti*." Gaṅgeśa's point, however, is simply to show a lack of parallelism between the way the self is known inferentially and how S knows what '*gavaya*' means.
30. Gaṅgeśa's main point is that once we know something we don't inquire further. But also he says again here, notably, that S would know *in general*, *sāmānyataḥ*, before encountering a *gavaya* buffalo, what the word means.
31. Understanding something in general about a *gavaya* would not prevent S, without an actual encounter, from asking further questions or of appropriately being told by the forester to go and see for himself what a *gavaya* is.
32. Here Kṛṣṇakānta discerns the end of the *pūrva-pakṣa* correctly (Calcutta, p. 89). The Varanasi edition does not.
33. Doesn't S comprehend from the forester's analogical statement what it is to be a *gavaya* buffalo? Gaṅgeśa definitely says no, implying that the universal being-a-*gavaya*-buffalo as well as particular buffalos are not known, at least not entirely, without the actual experience. However, we have to distinguish comprehension in general and in particular, and Gaṅgeśa has told us earlier that there would be the former (though not the latter) from S's grasp of what the forester says. Thus understanding what it is to be a *gavaya* buffalo in general (*sāmānyataḥ*) is not the same as comprehending the universal, being-a-*gavaya* buffalo, but rather a vague or incomplete or proto-understanding through knowing indicator characteristics common to being a cow (e.g., having-horns). Gaṅgeśa seems to waffle concerning whether it is the universal or the particular that is the grounds (*nimitta*) for a word's usage. But the truth is that it is both, as Gautama and Vātsyāyana maintain. Whether the one or the other is predominant is said to depend on context and other factors (see, in this book, pp. 77 and 87).
34. The standard Nyāya view, stated by Gaṅgeśa earlier, is that the aids to comprehension of a word include grammar and dictionaries. Gaṅgeśa is claiming that for the example on the table none of the common aids is sufficient for comprehending the fact that the thing is front is called *gavaya*, which is known instead by analogy.
35. Kṛṣṇakānta supplies the rule upon which the objection draws (Calcutta, p. 96), "As there is knowledge of something according to a uniform (repeatable) character (F), so there is grasping of referential power to just that (F)."

36. See the discussion of sentential meaning at the end of section, "Statements and facts," in Chapter 6. Here Gaṅgeśa relies in particular on semantic fitness, *yogyatā*. This involves a word's sense determining real possibilities of sentential meaning in that a meaningful sentence has to be possibly made true by a fact.

Sanskrit Glossary

1. PROPER NAMES (PHILOSOPHIC SCHOOLS AND SOME IMPORTANT CLASSICAL AUTHORS AND TEXTS)

Advaita Vedānta: sub-school of the Upanishadic philosophy of Vedānta that becomes a whole school to itself, subscribing to a spiritual monism, "All is Brahman," including—and especially—the seemingly individual consciousness or self.

Ānandavardhana: (c. 850) author of an influential work of aesthetics, *Dhvanyāloka*, where "suggestion," *dhvani*, is championed as a third power of words, in addition to denotation, *abhidhā*, and indirect, figurative meaning, *lakṣaṇā*.

Annambhaṭṭa: (c. 1650) Nyāya philosopher whose popular textbook treatment of Nyāya, *Tarka-saṃgraha*, is elucidated by an auto-commentary where several innovative positions and arguments are advanced.

Bhartṛhari: (c. 450) grammarian and philosopher of language celebrated for a *sphoṭa*—"comprehension in flash"—theory of sentence comprehension, a Platonist theory of universals, and an idealist metaphysics of a "word" *brahman*.

Bhāsarvajña: (c. 950) a slightly maverick Nyāya philosopher whose auto-commentary *Nyāya-bhūṣaṇa* ("*nyāya* ornament") on his *Nyāya-sāra* ("*nyāya* essence") is a major treatise outside the *Nyāya-sūtra* commentarial literature of Old Nyāya.

Bhāṭṭa: a follower of the Mīmāṃsaka philosopher Kumārila Bhaṭṭa or a view belonging to or deriving from Kumārila.

Caraka: (c. 200 BCE ?) legendary author of an important medical text.

Cārvāka: classical philosophic school of materialism, religious skepticism, and hedonism, famous in epistemology for attacking inference as a knowledge source, alleging the unknowability of inference-underpinning pervasion, *vyāpti*.

Dharmakīrti: (c. 650) Buddhist logician and epistemologist of the Yogācāra school, author of *Pramāṇa-vārttika* and other major works of Buddhist philosophy.

Gadādhara: (c. 1650) New Nyāya author famous for his linguistic theorizing and analysis of the concept of "intentionality," *viṣayatā*, "objecthood."

Gaṅgeśa: (c. 1325) systematizer if not the founder of "New Nyāya," *navya nyāya*, author of the influential *Tattva-cintā-maṇi* (q.v.).

Gautama: (c. 200) legendary author of the sūtras of the *Nyāya-sūtra*, Nyāya's founding text, sometimes called Akṣapāda ("lost in thought").

Jaimini: (c. 100 BCE) legendary author of the *Mīmāṃsā-sūtra*.

Jaina philosophy: a tradition commencing with Mahāvīra (c. 450 BCE) with dozens of texts in all periods, probably most famous for an ethics of *ahiṃsā*, "non-injury," and non-absolutism (*anekānta-vāda*) in metaphysics.

Jayanta Bhaṭṭa: (c. 875) Old (*prācīna*) Nyāya author of a non-commentarial treatise reorganizing but ranging over almost all the topics of the *Nyāya-sūtra* and disputing rival theories, *Nyāya-mañjarī*.

Kaṇāda: (c. 150) legendary author of the *Vaiśeṣika-sūtra*, Vaiśeṣika's founding text.
Kumārila: (c. 650) prominent Mīmāṃsaka philosopher whose metaphysical and epistemological views Nyāya philosophers often appropriate in part and dispute in part and sometimes wholesale.
Mādhava: (c. 1350) author of Advaita works as well as of a popular survey of all the philosophic schools, *Sarva-darśana-saṃgraha*, an early textbook of classical Indian philosophies which slightly favors Advaita Vedānta.
Mādhyamika: Buddhist school of skeptical philosophy founded by Nāgārjuna; sometimes called Buddhist Mysticism or Buddhist Absolutism.
Maṇikaṇṭha Miśra: (c. 1300) author of *Nyāya-ratna*, a text that precedes several of Gaṅgeśa's positions, particularly concerning inference, and that is sometimes cited by him.
Mathurānātha: (c. 1650) author of an influential commentary on Gaṅgeśa's *TCM*.
Mīmāṃsā: a long-running realist school ("Exegesis") celebrated for its Vedic interpretation, principles of interpretation, philosophy of language, and epistemology; the *Mīmāṃsā-sūtra* (c. 100 BCE) is the root text; a commentary by Śabara (c. 500) is expanded (and sometimes corrected) by Kumārila Bhaṭṭa (c. 650) and in a second line by Prabhākara (c. 700), the two being the chief philosophic proponents with followers known as Bhāṭṭas and Prābhākaras.
Mīmāṃsaka: an advocate of Mīmāṃsā.
Mīmāṃsā-sūtra: (c. 100 BCE) the founding text of Mīmāṃsā.
Nāgārjuna: (c. 150) prominent Buddhist philosopher understood by Nyāya epistemologists to be a skeptic about "knowledge sources," *pramāṇa*; founder of the Mādhyamika school of Buddhist philosophy.
Naiyāyika: an advocate of Nyāya.
Navya Nyāya: "New Nyāya"; the late Nyāya philosophy of, preëminently, Gaṅgeśa and his followers, pioneered in large part by Udayana, whom, however, Gaṅgeśa counts as Old (*prācīna*) Nyāya.
Nyāya: "Logic"; a school of metaphysical realism and "knowledge sources" in epistemology prominent throughout the classical period, from the *Nyāya-sūtra* (c. 200) on; explicitly combined with Vaiśeṣika in later centuries beginning with Udayana (c. 1000) and sometimes called Nyāya-Vaiśeṣika; Nyāya authors generally are focused on issues in epistemology but take positions on a wide range of philosophical topics; see also NYĀYA.
Nyāya-Vaiśeṣika: see NYĀYA.
Nyāya-kusumāñjali: ("Flower Offering of Arguments") a text by Udayana collecting and defending arguments for the existence of God.
Nyāya-ratna: ("Jewel of Nyāya") a long text by Maṇikaṇṭha that precedes some of Gaṅgeśa's *TCM* particularly concerning inference.
Nyāya-sūtra (*NyS*): (c. 200) Nyāya's foundational text attributed to Gautama.
Padārtha-dharma-saṃgraha (*PDS*): ("Compendium of the Properties of the Fundamental Types of Things or Categories") the sole work of Praśastapāda (c. 575) and the central text for New Nyāya for ontological categories and supporting arguments, although there are a few lines of separate development.
Pāṇini: (c. 450 BCE) author of a systematic grammar for Sanskrit, sometimes referred to as Pāṇini's sūtras, which inaugurated the long and rich grammarian tradition of classical India including "grammarian philosophy," a famous later representative of which is Bhartṛhari.
Prabhākara: (c. 700) prominent Mīmāṃsaka philosopher reputed to be a renegade pupil of Kumārila, commonly called "Guru" throughout classical philosophy, whose views are typically taken by Gaṅgeśa to be Nyāya's principal competitor.
Prācīna Nyāya: "Old Logic"; the philosophy of the *Nyāya-sūtra* and its commentaries and of a few independent treatises; see NYĀYA.

Praśastapāda: (c. 575) author of the *Padārtha-dharma-saṃgraha*, the reformulation and explanation of the *Vaiśeṣika-sūtra* that comes to be the central and defining text of Vaiśeṣika.
Raghunātha: (c. 1500) prominent Gaṅgeśa commentator who championed innovative positions in Nyāya's realist ontology.
Śabara: (c. 500) author of the oldest extant commentary on the *Mīmāṃsā-sūtra*.
Śālīkanātha Miśra: (c. 900): author of *Prakaraṇa-pañcikā*, a good (and available) presentation of Prābhākara Mīmāṃsaka positions.
Sāṃkhya: "Analysis"; an early school of metaphysical dualism analyzing nature (*prakṛti*) in the interests of psychological disidentification.
Śaṅkara: (c. 725) the most prominent philosopher of the Advaita Vedānta school, espousing a radical monism of the sole reality of Brahman, the Absolute.
Śloka-vārttika: Kumārila's commentary on a portion of the *Mīmāṃsā-sūtra*.
Śrīharṣa: (c. 1100) Advaita dialectician, whose *Khaṇḍana-khaṇḍa-khādya*, "Sweetmeats of Refutation," directed principally against Nyāya and in particular Udayana, becomes part of the New Nyāya curriculum.
Tātparya-pariśuddhi: Udayana's commentary on the *Nyāya-sūtra* and its earlier commentaries, in particular Vācaspati's.
Tattva-cintā-maṇi (*TCM*): "(Wish-fulfilling) Jewel of Reflection on the Truth (about Epistemology)," Gaṅgeśa's sole text, comprised of a chapter on each of the "knowledge sources," *pramāṇa*; focus of much literary activity in later Nyāya.
Udayana: (c. 1000) Nyāya philosopher counted by Gaṅgeśa his "teacher" (*ācarya*); prolific author of both commentaries and independent texts and principal unifier of Nyāya epistemology and logic with Vaiśeṣika ontology.
Uddyotakara: (c. 600) author of the core commentary or sub-commentary, *Vārttika* (*NyV*), on Vātsyāyana's *Nyāya-sūtra* commentary; adversary of, principally, Buddhist Yogācāra positions.
Upaniṣad: "secret doctrine"; various prose and verse texts appended to the Veda, having mystic themes centered on an understanding of self or consciousness in relation to the Absolute or God, called Brahman; the primary sources for classical Vedānta philosophy.
Vācaspati Miśra: (c. 950) major Nyāya author whose *Tātparya-ṭīkā* sub-commentary (*NyVTatp*) on Uddyotakara's *Vārttika* is part of the core Old Nyāya literature; author also of texts within four other classical schools, Yoga, Sāṃkhya, Mīmāṃsā, and Advaita Vedānta.
Vaiśeṣika: "Atomism"; a classical philosophy focusing mainly on ontological issues ("What kinds of things are there?") and defending a realist view of material things as composed of atoms as well as a realist ontology of universals or class characteristics; explicitly combined by Udayana with Nyāya with practically no separate literature during the New Nyāya period, with its ontological theory (but not its epistemology) implicitly, and occasionally explicitly, assumed and endorsed by Nyāya authors before Udayana.
Vātsyāyana: (c. 400) author of the oldest extant commentary, *Bhāṣya* (*NySBh*), on the *Nyāya-sūtra*.
Veda: "revealed Knowledge"; comprised of four (sometimes three) Vedas which are collections of hymns to various Indo-European gods and goddesses; the oldest texts in Sanskrit (some hymns possibly as early as 1500 BCE); the most sacred texts of Hinduism.
Vedānta: originally an epithet for Upaniṣads; in the classical period, the philosophy of the *Brahma-sūtra* and of several sub-schools defending Upaniṣadic views often in an idealist or illusionist spirit and opposed to Nyāya's realism but also in theistic sub-schools allied with and borrowing from Nyāya.
Yogācāra: Buddhist Idealism; the school of the idealists Asaṅga, Vasubandhu, and company, as well as of the great Buddhist logicians Dignāga and Dharmakīrti

who lay out a pragmatist epistemology that is a principal rival of Mīmāṃsā and Old Nyāya.

2. TERMS

ābhāsa: false semblance, (mere) appearance, the non-genuine; e.g., a *hetv-ābhāsa* is a misleading inferential mark, *hetu*, i.e., a fallacy.

abhāva: absence, negative fact; an absence invariably has a locus and an absentee; e.g., an absence of a pot on the floor has the floor as its locus and the pot as its absentee; absences come in four varieties, prior (as of a pot before its production), posterior (as of a pot after it is destroyed), absolute (as of a pot on the floor), and mutual (as between a pot and a cloth).

abhidhā: reference, denotation; the primary power, *śakti*, of a word in relation to an object.

abhihita-anvaya-vāda: "theory of the connection of the referents," the Bhāṭṭa and Naiyāyika view of sentence meaning as the connection in the object or fact of the referents of the component words, the words having reference independently of the context of the sentence.

abhyāsa-daśā-āpanna: familiarity; known through repeated practice.

adhyāsa: superimposition.

adṛṣṭa: "Unseen Force," i.e., *karman* or karma.

ajahal-lakṣaṇā: metaphor where a primary, denotative sense of the word meant figuratively is retained in the figurative, secondary meaning, e.g., "The umbrella-bearers are passing," where what is meant is that the important people who walk while being shaded by umbrella-bearers (the brass) are passing and the umbrella-bearers of course, too.

ākāṅkṣā: syntactic "expectation," a condition governing the intelligibility of a statement, according to Naiyāyikas and others; to cite a classical example, no single word appearing in the accusative case can be understood as a statement (excepting verbal ellipsis)—somewhat like "to the cow" standing alone in English—because of a violation of "(syntactic) expectation."

ākāśa: "ether," the medium of sound, the only non-atomic substance among five that are material, according to Nyāya-Vaiśeṣika and other classical views.

akhaṇḍa-upādhi: unanalyzable "surplus property" (see UPĀDHI), contrasting with *sakhaṇḍa upādhi*.

ākṛti: shape, anatomy; the nature of a universal (*jāti*) according to Bhāṭṭa Mīmāṃsā.

alaṃkāra-śāstra: aesthetics, the "science of ornament," the classical tradition of literary criticism in particular.

alaukika-sannikarṣa: "extraordinary sensory connection" which, according to the Nyāya mainstream, comes in three types: (a) connection mediated by a universal, as in cognition of an unobserved instance of a universal ("The calf to be born will have a dewlap"); (b) connection mediated by memory, as in cognition of sandalwood in the distance as having a certain smell, recognition of something perceived previously, and perceptual illusion—see JÑĀNA-LAKṢAṆĀ-SANNIKARṢA; and (c) connection mediated by yogic power.

ālaya-vijñāna: "storehouse consciousness," cosmic mind or mentality where intersubjective cognitive dispositions are located; a principal concept in early Yogācāra Buddhism.

anātman: "no self" or "no soul"; an important Buddhist doctrine.

anavasthā: infinite regress, a defeater and conceptual predicament revealed by *tarka*, "suppositional reasoning."

anekānta-vāda: non-absolutism, positive perspectivalism, the "doctrine of many-sidedness"; the principal metaphysical stance of Jaina philosophers.

antar-vyāpti: "internal pervasion," pervasion according to something's partial or complete identity with itself or something else; a concept of later Buddhist logic thought to explain inferences based on class inclusions, such as "It is a tree because it is an oak."

anubhava: "presentational experience," awareness, which comes in four veridical varieties, according to Nyāya, the perceptual, inferential, analogical, and testimonial, and many non-veridical varieties (see the chart, p. 29); distinguished as cognition (*jñāna*) from remembering as presenting fresh news.

anugama: uniformity, consecutive character; according to Nyāya-Vaiśeṣika, a criterion of a true universal or natural kind, *jāti*, whose uniformity is taken to prompt recurrent experience.

anukūla-tarka: reasoning favorable to one's own position, such as its comparative simplicity (*lāghavatva*); "with the grain."

anumāna: inference, the inferential process; one of four *pramāṇa* or generators of knowledge, according to Nyāya.

anumiti: inferential knowledge, the result of inference as a *pramāṇa*.

anupalabdhi: "non-cognition," the means of knowledge whereby an absence is known, according to the Bhāṭṭa branch of Mīmāṃsā.

anuvyavasāya: apperception, "after-cognition," introspection.

anuyogin: relational correlate to a countercorrelate, *pratiyogin*.

anvaya: (1) positive correlations (things both H and S) entailed by a natural pervasion, *vyāpti*, constituting positive evidence for the pervasion; see also VYATIREKA; (2) ontological connection of the meanings of the words in a sentence in a complex object or fact designated, according to Nyāya and Bhāṭṭa Mīmāṃsā; (3) the total meaning of a sentence considering all the syntactic, semantic, and pragmatic factors in interrelation.

anvaya-vyatireka: positive correlations (things both H and S) and negative correlations (things not-S and not-H) entailed by a natural pervasion, *vyāpti*, constituting both positive and negative evidence for the pervasion.

anvaya-vyatirekin: (1) a property with both a positive and a negative range, i.e., both occurring in some places and not occurring in others; (2) an inference based on both positive and negative correlations; cf. KEVALA-ANVAYIN and KEVALA-VYATIREKIN.

anvīkṣā: (= *ānvīkṣikī*) "critical investigation," a term sometimes used by Naiyāyikas and others to refer to the enterprises of philosophy in general and Nyāya in particular.

anvita-abhidhāna-vāda: "theory of reference of the connected," the Prābhākara view of reference as belonging to the sentence, not to its component words except as connected syntactically, with a complex object as that which is referred to, the words not having reference independently of the context of the sentence.

anyathā-khyāti: the view of perceptual error endorsed by Nyāya that finds a property-bearer presented perceptually as "other than what it is" due to an epistemic deficiency (*doṣa*) such as a departure from the normal workings of the sense organs, etc., and involving a retrieval of previous perceptual information through excitation of a "memory disposition," *saṃskāra*.

anyathā-siddha: "irrelevant," not regulative; a thing or property that accidentally precedes an effect in focus or in another way is not relevant to its production as captured by causal laws (permitting inference); a donkey who happens always to be used to carry the clay out of which a potter makes all his pots is a stock example.

anyonyāśraya: "mutual dependence" as a logical, conceptual, or argument flaw revealed by *tarka*, "suppositional reasoning."

āpta: trustworthy authority or testifier, one who knows the truth and wants to communicate it without deception, according to Nyāya.

arthāpatti: "postulation," "presumption," "circumstantial implication," an independent *pramāṇa* according to Bhāṭṭa Mīmāṃsakas, a knowledge source viewed as a form of inference by Naiyāyikas; an argument that something would otherwise be impossible or inexplicable (*anyathā-an-upapatti*); e.g., from the information that fat Devadatta does not eat during the day, we know by "postulation" that he eats at night.

asādhāraṇya: "no similar instance," an inferential fallacy where there is no comparison class, no extrapolative basis for presuming a pervasion or general rule on which a genuine inference would depend.

asamavāyi-kāraṇa: "emergent" or "co-inherent" cause, e.g., the blue color of the threads of a blue piece of cloth is an emergent cause of the blue of the cloth.

āsatti: (proper) "proximity" of words in a spoken statement; proper representation; one of three necessary conditions commonly identified for sentential meaning.

asiddha: the "unshown," "unestablished," or "unproved," an inferential fallacy that may be likened to an unwarranted premise, normally, the prover's being "unestablished" as qualifying the inferential subject.

ātman: individual self, one of nine basic types of substance, according to Nyāya-Vaiśeṣika; cosmic self, according to Vedānta.

ātmāśraya: "self-dependence"; the defeater, as shown by *tarka*, of any thesis proposing (impossible) self-causation or self-qualification; definitional circularity.

avaccheda: specification, delimitation, "paring down to"; techniques used by late Nyāya philosophers to remove vagueness and definitional overextension.

avacchedaka: specifier, delimiter.

bādha: (1) the fallacy or defeater of "patent falsehood," where the inferential subject is known in advance not to exhibit the probandum; (2) experiential "sublation," as when one sees veridically a real rope previously mistaken for a snake.

bādhaka: counterconsideration, epistemic "defeater," blocker of a cognitive effect of a specified type under specified conditions.

bādhaka-abhāva: "absence of defeaters," a condition on the certifiability of a cognition, according to Nyāya; defeasibility.

bādhita: "defeated"; "defeated in advance" as a type of fallacy.

bhāvanā: a mentally dispositional property such as a memory capacity; a type of *saṃskāra*.

bhūyo-darśana: "wide (relevant) experience"; the key condition leading to knowledge of a natural pervasion (*vyāpti*) of things H by things S, according to the Nyāya mainstream.

brahman: the "Absolute" or "God," the central concern of Vedānta philosophy.

cakraka: "circularity," the epistemic defeater of a thesis that proposes an impossible circular chain of causation or qualification; circular reasoning.

darśana: a "seeing," a perspective on the truth, a philosophy; the discipline of philosophy understood as holistic and concerned with the most important truths and values (sometimes contrasted with "critical inquiry," *anvīkṣā*).

dharma: (1) property; (2) right religious and moral practice.

dharmin: property-bearer.

dhvani: sound, tone; "suggestion" as a third power of words, or mode of meaning, *śakti*, in addition to reference and figurative meaning; for example, the statement, "The village is in the Gaṅgā," whose figurative sense is equivalent to "The village is on the bank of the Gaṅgā," is said by the third power to suggest (by association with the sacred river) a meditational atmosphere.

doṣa: "fault," "epistemic defect," veridicality-undermining causal condition responsible for the generation of wrong views, according to Nyāya.

dravya: substance, one of seven ontic primitives or categories (*padārtha*) of mainstream Nyāya-Vaiśeṣika; nine fundamental types of substance are said to be earth, water, fire (or the "fiery element," *tejas*), air (these are the four atomic elements), ether (the fifth "material" element, which is non-atomic and the medium of sound), time, space, *manas* (the "mind" or "internal organ"), and self (*ātman*).

dṛṣṭānta: a pervasion-supportive "example," a basis for induction, typically a locus known to exhibit both the prover and the probandum (i.e., an instance of *sapakṣa*, q.v., that exhibits the prover), e.g., a kitchen hearth where both smoke and fire are known to have occurred; providing an example suggests that proper inductive procedure has been followed (cf., *anvaya-vyatireka*) and that the "pervasion" or *vyāpti* which a proffered inference presumes is properly evidenced.

eka-vṛtti-vedyatā: the doctrine of a qualificandum being known simultaneously as qualified by a qualifier, such that any verbalizable cognition will have three types of objecthood or intentionality, *viṣayatā*: a qualifier portion, a qualificandum portion, and a portion concerning the qualificative relation.

gauravatva: "heaviness," theoretic cumbersomeness (alleged comparatively); a form of *tarka*, "suppositional reasoning."

gavaya: a rare kind of wild buffalo.

guṇa: (1) "excellence," "epistemic excellence," a veridicality-indicating causal condition, according to Nyāya; (2) quality; one of seven fundamental categories (*padārtha*) in traditional Nyāya-Vaiśeṣika ontology.

guru: teacher; Prabhākara, the Mīmāṃsaka philosopher.

hetu: inferential mark, "prover," *sādhana* (q.v.).

hetvābhāsa: false or misleading prover or inferential mark, "fallacy of the prover" or simply "fallacy."

indriya-sannikarṣa: (= *indriya-pratyāsatti*) connection between an operative sense organ and an object perceived; see also ALAUKIKA-SANNIKARṢA and JÑĀNA-LAKṢAṆA-SANNIKARṢA.

Īśvara: God, "Lord"; an individual self or *ātman* responsible for the creation or material arrangement of the world but not for atoms, which are eternal and uncreated, nor karma, which is an independent force (*adṛṣṭa*), nor other selves, such as human selves, which are eternal but also subject to spiritual ignorance and other weaknesses whereas God is not—according to Vātsyāyana and most but not all later Nyāya philosophers.

jalpa: debating for victory where (in contrast with *vāda*) using tricky arguments is all right so long as one is not caught.

jāti: universal, natural kind, a property occurring in more than a single instance or locus.

jāti-bādhaka: a "blocker," defeater, or counterconsideration against taking a property to be a true universal, *jāti*, generating an "infinite regress," for example, which blocks cowhood-hood.

jñāna: "cognition" (see the chart, p. 29); both presentational awareness, *anubhava*, and remembering, *smaraṇa*; an episodic psychological quality or occurrent knowledge, according to Nyāya-Vaiśeṣika, that has an object or objecthood, *viṣayatā*, and that guides voluntary action.

jñāna-lakṣaṇa-sannikarṣa: (*jñāna-lakṣaṇa-pratyāsatti*) cognitively mediated connection with a cognized object that enables perception of something not in direct connection with the operative sense organ; for example, the recognition, "This is that Devadatta," is perceptual with the "thatness" provided—"retrieved" (*upanīta*)—by memory; see also INDRIYA-SANNIKARṢA and UPANĪTA.

jyeṣṭha-pramāṇa: perception as the fundamental ("eldest") *pramāṇa*; according to Nyāya, non-perceptual knowledge sources are each said to depend in some way on perception.

karaṇa: "trigger," "proximate instrumental cause," a necessary condition that on being met an effect regularly comes about.

kāraṇa: "cause," a necessary and regulative condition for an effect, by default of the subtype called "instrumental cause," *nimitta-kāraṇa* but including causes called "inherent," *samavāyin*, and "emergent," *asamavāyin*; see also SĀMAGRĪ, "sufficient causality."

karman: (1) action, motion; (2) psychological dispositions to act in a certain manner accrued through previous actions; habits, karma; conceived metaphysically as an environmental influence (*adṛṣṭa*, "Unseen Force") affecting future happiness or suffering (as in having good luck or bad), in particular the nature of one's body in one's next reincarnation.

kevala-anvayin: (1) "universally positive," a property with no negative range, nowhere, that is, where it is not; (2) "only positive," an inference whose inductive support consists only of instances of co-presence between the prover (H) and probandum (S), with no known instances of co-absence, i.e., things S and H but not things not-S and not-H.

kevala-vyatirekin: "only negative," an inference whose inductive support consists only of instances of co-absence between the prover (H) and probandum (S), with no known instances of co-presence, i.e., things not-S and not-H but not things S and H.

kṣaṇa: "point-instant," the smallest increment of time, too small to be perceptible, according to Nyāya; a temporal atom, so to say, according to Yogācāra.

lāghavatva: "lightness," parsimony, theoretic simplicity; a form of *tarka*, "suppositional reasoning."

lakṣaṇa: characterization, definition.

lakṣaṇā: figurative speech; a second power or *śakti* of words in addition to denotation, *abhidhā*.

lakṣya: that which is indicated in indirect, figurative speech, the beloved's face, for instance, indicated by reference to the moon, the *śakya*, direct referent.

manas: the mind or internal organ, the sense-mind, the sense organ operative in the perception of psychological properties such as pleasure and pain and the conduit of sensory information to the perceiving self, according to Nyāya and other classical schools.

māyā: illusion; cosmic illusion; the nature of the entire phenomenal display according to Advaita Vedānta.

mīmāṃsā: (1) science of interpretation; (2) a philosophic school, see MĪMĀṂSĀ.

mithyā-jñāna: false cognition; delusion.

mukti: (*mokṣa*) "liberation" from rebirth, salvation, the *summum bonum* according to several schools.

nigraha-sthāna: "grounds for rebuke" in a debate; informal fallacy (several are identified in the *Nyāya-sūtra*).

nimitta-kāraṇa: instrumental cause, necessary condition, such as a potter, potter's wheel, and so on, for the production of a pot.

nirākāra: "without form," said of cognition by Naiyāyikas who see cognitions as given shape or form by their objects—their intentionality (*viṣayatā*) object-determined—a view contrasting with Buddhist *sākāra-vāda*.

nirṇaya: reflective knowledge; final ascertainment as a result of philosophical investigation or *nyāya*.

nirvikalpaka: "indeterminate"; indeterminate perception grasps a qualifier "in the raw," not as qualifying a qualificandum; indeterminate perception is not apperceptible and not directly verbalizable, according to later Nyāya.

niścaya: certainty, warrant, sufficient epistemic confidence to act unhesitatingly.

niṣkampa-pravṛtti: voluntary action taken unhesitatingly.

nyāya: (1) the philosophic school, see NYĀYA; (2) philosophical examination and argument; (3) maxim or principle.

padārtha: category, primitive, "type of thing to which words refer"; there are seven fundamental categories according to mainstream Nyāya-Vaiśeṣika, (1) substance, (2) quality, (3) motion, (4) universal, (5) final particularizer, (6) inherence, and (7) absence.

pakṣa: "inferential subject," a locus where a prover is known or presumed to reside (e.g., the mountain in the stock example of inference from smoke to fire).

pakṣa-dharmatā: the rule and certification condition that the prover has to be known as qualifying the inferential subject.

parāmarśa: "reflection" or "consideration" necessary to the generation of inferential awareness; a cognitive putting together, so to say, of the evidence of the prover as qualifying the subject with that of the prover's being pervaded by the probandum.

param-parā: chain relation, as with the indirect, figurative meaning that works from designation of a first item, the moon, *śakya*, to a second item ultimately indicated and meant, the beloved's face, *lakṣya*.

para-prāmāṇya: cognition as "certified through another," "extrinsic justification," usually by means of inference; Nyāya's doctrine of certification as requiring inference or apperceptive source identification to establish the truth of a target cognition; an epistemological thesis opposed to self-certification (*sva-prāmāṇya*).

parārthānumāna: "inference for others"; a formal proof embedding a valid inference, to be best expressed, according to Nyāya (with a few dissenters), in a five-member argument understood as a single sentence.

paribhāṣika: technical (as in "technical terms"), definitional, stipulational.

prakāra: as a Nyāya technical term, "predication content," more generally, "way," a way something appears; e.g., a cognition *Fa* has F-hood as its "predication content," as the way something, *a*, is appearing, provoking, in appropriate circumstances, the cognizer to say, "It's F," or "It's an F," or the like; a qualifier (*viśeṣaṇa*) as cognized.

prakaraṇa: (1) textual and extra-textual "context" of a statement; (2) a section of a philosophic or scientific treatise.

prakṛti: "nature" in Sāṃkhya philosophy, the uniform ground of all phenomena, of everything material as presented in experience, all effects being transformations of a common material cause in which they in a sense pre-exist.

pramā: knowledge, veridical cognition, veridical "presentational experience," *anubhava*; unreflective knowledge.

pramāṇa: "knowledge source," means to *pramā*; according to Nyāya, there are four, perception, inference, analogy, and testimony.

pramāṇa-ja: knowledge-source-produced; certified as knowledge.

pramāṇa-samplava: coalescence of one or more knowledge sources in making known an object or fact.

prāmāṇya: (1) knowledge, the condition of being generated by a knowledge source, i.e., a true cognition's being generated by a genuine knowledge source, *pramāṇa*; (2) justification, truth-grounded evidence.

prāmāṇya-ābhāsa: pseudo-justification, the appearance of having knowledge for good reasons without actually knowing the truth.

prameya: object of knowledge; the knowable.

prāpya-kāri: a doctrine concerning a sense organ such as touch which is said to "work by reaching" its object through a direct contact at the object's own locus; contrasting with *a-prāpya-kāri*, "not reaching its object," said of a sense organ such as hearing in relation to an object that is not grasped through contact at the object's own locus.

prasaṅga: dialectical difficulty, predicament drawn out by *tarka*, "suppositional reasoning," such as contradiction or infinite regress; the equivalent of *tarka* in Buddhist usages.

pratibandhaka: preventer, blocker.

pratijñā: "proposition"; the first member of a formal "inference for others," *parārthānumāna*, the "proposition to be proved."

pratikūla-tarka: reasoning unfavorable to a position, such as prompting an infinite regress or having a consequence known to be false; reasoning "against the grain."

pratiyogin: (1) in Navya Nyāya, the countercorrelate or relatum of a dyadic relation, i.e., the second term of a relation, the *anuyogin* being the first (e.g., the *pratiyogin* of "objecthood," *viṣayatā*, is cognition and the object of cognition is the *anuyogin*; the *pratiyogin* of "subjecthood," *viṣayitā*, is the object of cognition and the cognition is the *anuyogin*); (2) counterpositive of an absence, "absentee" (with an absence of a pot on the floor, the pot is the *pratiyogin*, the floor the *anuyogin*).

pratyāsatti: see INDRIYA-SANNIKARṢA.

pratyakṣa: (1) perception or perceptual knowledge, the veridical result of perception as a knowledge source; (2) the source itself, the "knowledge source," *pramāṇa*, that generates bits of perceptual knowledge.

pravṛtti: voluntary action.

pravṛtti-nimitta: grounds for a particular activity of speech, for use of a particular word.

pūrva-pakṣa: a *prima facie* position, the opponent's position; a portion of a text devoted to exploring views and arguments not accepted by the author who will express his own views in an upcoming and correlate *siddhānta* (q.v).

pūrva-pakṣin: an opponent or first-level interlocutor in relation to a *siddhāntin* (q.v.).

ṛṣi: ancient sage; instrument of Vedic revelation, according to some Nyāya philosophers.

rūḍhi: convention; the principal way the meaning or denotation relation between word and object is set up according to Nyāya and some other schools (not Mīmāṃsā).

śabda: (1) "testimony" as a knowledge source according to Nyāya and some other classical schools; (2) "sound," the quality grasped by the organ of hearing; (3) revelation, *śruti* (q.v.).

śābda-bodha: knowledge from trustfully understood words, veridical cognition generated by testimony.

sādhana: "prover," *hetu*, in relation to a probandum term within a knowledge-producing inference (e.g., smokiness, in an inference to fieriness at a certain spot).

sādhya: "probandum," the property to be proved by a prover in an inference (e.g., fieriness in an inference from smokiness).

sādṛśya: similarity.

sahakārin: auxiliary cause, a necessary condition that is not in itself sufficient for an effect nor its trigger.

sākāra-vāda: a Buddhist doctrine about cognition "taking form internally," not depending on external things, as opposed to Nyāya's view that cognition is in itself "without shape or form," *nirākāra* (q.v.).

sakhaṇḍa upādhi: a surplus property that is ontologically composite and analyzable, e.g., "blue-cow-hood," which is a composite of the quality, blue, and the universal, cowhood.

śakti: "power" of words to connect with objects; the meaning relation; there are two such powers according to Nyāya, "reference," *abhidhā*, and indirect, "figurative meaning," *lakṣaṇā*, not three, as according to some, adding "suggestion," *dhvani*.

śakya: the intermediate item or "referent" in indirect, figurative speech, the moon, for instance, indicating the *lakṣya*, the beloved's face, the ultimately indicated or meant.

samādhi: yogic trance, the ability to shut off mental fluctuations, concentration.

sāmagrī: collection of causal factors sufficient to produce an effect.

sāmānya: universal or *jāti*; "common characteristic."

sāmānyato dṛṣṭa: a type of inference, discussed in the *Nyāya-sūtra* commentaries on *NyS* 1.1.5 and elsewhere, an inference proceeding "on the basis of a general principle holding for all things experienced (as of such a kind)" to an inferred analogue in a case at issue; e.g., "Pleasure and the like have a substratum, *since* they are qualities, like color" (the key step, according to Vātsyāyana, to inferential knowledge of the self, which is to be identified with the substratum proved).

samavāya: "inherence"; ontic glue, according to Nyāya and other realist schools, relating certain types of things to their loci, such as true universals, *jāti*; e.g., cowness inheres in cows.

samavāyi-kāraṇa: "inherent cause," a substratum in relation to a superstratum, e.g., a property-bearer in relation to its properties and parts in relation to a whole.

sannikarṣa: see INDRIYA-SANNIKARṢA.

saṃśaya: doubt, uncertainty.

saṃskāra: memory-impression, mental disposition; impetus.

saṃyoga: contact, conjunction.

sapakṣa: things or loci where the probandum is known to occur, e.g., a kitchen hearth, etc., with respect to an inference from smoke to fire.

śāstra: science or craft; a scientific textbook.

sat-pratipakṣa: the "counterinference" fallacy and defeater of a putative inference, where a first thesis to be proved (*Sa*) is countered by an opposite thesis (~*Sa*), each with a prover counterbalanced by another prover equally well-supported by correlations.

savikalpaka: "determinate"; determinate cognition, which is a "propositional" cognition, verbalizable cognition, cognition of an entity as qualified by a qualifier, according to Gaṅgeśa and New Nyāya, paradigmatically a cognition of a qualificandum (*viśeṣya*) qualified by a qualifier (*viśeṣaṇa*) or property, thus having objecthood or intentionality (*viṣayatā*) with the structure, *a*-as-F; opposed to *nirvikalpaka*.

siddhānta: (1) the "right view" answering or displacing a correlate "*prima facie* view" or *pūrva-pakṣa*; an author's "own position" and that of his school; (2) a portion of a text devoted to elaborating an author's own views and arguments in relation to a previous *pūrva-pakṣa* of contending views and arguments.

siddhāntin: the "proponent of the right view" answering a correlative *pūrva-pakṣin* (q.v.); the *siddhāntin* is normally the author himself speaking for himself and his school.

siddha-sādhana: the fallacy of trying to prove what is already known or generally admitted.

smaraṇa: "remembering," an occurrent cognition, *jñāna*, distinguished from *anubhava*, "presentational experience," by depending in its correctness on the presentational experience responsible for formation in a self (or mind) of a *saṃskāra* memory-disposition making it and other rememberings possible.

smṛti: (1) memory; (2) second-order of sacred texts in epistemological contrast with a first order, *śruti*.

sphoṭa-vāda: theory of sentential holism proposed by Bhartṛhari; the sentence, which is the basic semantic unit (not the word), is understood "in a flash" or "burst," *sphoṭa*.

śruti: the Veda, the highest order of "revelation," according to popular Hinduism.

sthiti-sthāpaka: the dispositional property of elasticity, e.g., the disposition of a stretched rubber band to assume a shorter length.

sūtra: "thread"; an aphorism or summary statement meant to express succinctly a position or argument which is to be explained and fleshed out by commentary whether in written form or orally by a teacher or expert.

sūtra-kāra: sūtra-maker; e.g., Gautama as the author of the sūtras of the *Nyāya-sūtra.*

sva-bhāva: (1) self-nature, independent existence; (2) according to Buddhist logic, a type of prover that works by a relation of identity; see also *ANTAR-VYĀPTI.*

sva-lakṣaṇa: particular, individual, the unique, "that which is its own mark"; an important Buddhist ontological concept.

sva-prāmāṇya: cognition as "self-authenticating," a Mīmāṃsaka and Vedāntic view of cognitive confirmation contrasting with the Naiyāyika view that a cognition is certified "through another," *para* as opposed to *sva*; see also *PARA-PRĀMĀṆYA.*

svārthānumāna: "inference for oneself," natural inference, contrasting with formal "inference for others," *parārthānumāna* (q.v.).

sva-rūpa-sambandha: self-linking relation, e.g., a rope (tying itself, so to say, to a tree as well as a goat).

svayam-prakāśamāna: "irreflexively self-illuminating"; an Upanishadic doctrine of the nature of self-consciousness championed by, among others, the Prābhākara Mīmāṃsaka.

tarka: "suppositional reasoning"; according to Nyāya and other classical schools, usually a hypothetical argument revealing a fallacy or defeater with respect to a position $\sim p$ opposed to another position p that is to be accepted so long as p has independent evidence in its favor.

tarka-ābhāsa: apparent or fallacious instance of suppositional reasoning, *tarka.*

tātparya: "intention," what a speaker or author means to say.

trairūpya-hetu: doctrine of the "threefold inferential mark" due to the Buddhist philosopher, Dignāga: see p. 57 in this book.

udāharaṇa: "application," the fourth member of a formal "inference for others," *parārthānumāna*, the assertion that the inferential subject falls under the general rule expressing a "pervasion," *vyāpti.*

upādhi: in Nyāya, (1) the inferential *upādhi*, the inferential "undercutter," a special condition cognition of which undercuts an inference, blocking or preventing the occurrence of genuine inference through bringing about reasonable suspicion of deviation from a rule or pervasion (*vyāpti*); standardly defined as something that pervades the probandum of a targeted inference while failing to pervade its prover (all things S, the probandum, are U, the undercutter, but some things H, the prover, are not U); (2) the ontological *upādhi*, a "surplus property," an "imposed property" contrasting with a genuine universal, *sāmānya* or *jāti.*

upalakṣaṇa: (1) indirect indication; (2) indicator; a feature presented, or referred to, to indicate something else; a differentiator that determines reference having little or nothing to do with what the referendum is, i.e., not one of its genuine qualifiers, e.g., hovering crows mentioned to pick out Devadatta's house.

upamāna: "analogy"; analogical acquisition of vocabulary, a *pramāṇa* according to Nyāya and some other classical schools.

upamiti: "analogical knowledge," e.g., a subject S knowing from a previous analogical statement that the word '*gavaya*' is used to designate the sort of animal that S is currently perceiving, and thus knowing (and possibly saying in the speech act), "That's what the word means."

upanīta: "retrieved," "revived"; memory-impressions, *saṃskāra*, can be provoked to project previous perceptual content or objecthood into a current presentational experience, as happens in perceptual illusion and in several further types of sensory cognition according to Nyāya.

vāda: "discourse," enquiry undertaken to discover the truth on a topic or issue of concern.

vipakṣa: loci where a probandum is known to be absent, e.g., a lake with respect to an inference from smokiness to fieriness at a spot.

virodha: "incompatibility" or "contradiction"; a fallacy and defeater of a putative inference where the prover proves not the probandum but its opposite.

viṣaya: cognized object.

viṣayatā: "objecthood," intentionality, one side of the relation between a cognition and its object, with the other as *viṣayitā*, according to New Nyāya.

viṣayitā: "subjecthood," intentionality, one side of the relation between a cognition and its object, with the other as *viṣayatā*, according to New Nyāya.

viśeṣa: (1) distinction, difference, particular; (2) individualizer, particularizer, or numeralizer, one of seven ontic primitives or categories according to mainstream Nyāya-Vaiśeṣika.

viśeṣaṇa: qualifier; qualities (e.g., blue), universals (e.g., cowhood), motions, along with unclassified properties (*upādhi*) all count as qualifiers that qualify a qualificandum, *viśeṣya*, according to later Nyāya.

viśeṣaṇatā: "being-a-qualifier," "qualifierhood"; the relation (*sannikarṣa*) between an absence and a sense organ that is operative in perception of an absence; for example, it is in virtue of being a qualifier of a floor that a pot-absence there can be known perceptually.

viśeṣya: the qualificandum as determined by a cognition of an entity as qualified; the thing cognized, the bearer of qualifiers (= *dharmin*).

viśiṣṭa: an entity as qualified; a qualificandum together with one or more of its qualifiers as known by a qualificative cognition (*viśiṣṭa-jñāna*, "cognition of an entity as qualified").

viśvāsa: trust; belief.

vitaṇḍā: refutational debate by captious argument with no express concern to establish a thesis of one's own.

vyabhicāra: "deviation" of the occurrence or extension of a putative prover property from the occurrence or extension of its probandum such that there is no pervasion (*vyāpti*) of the prover by the probandum.

vyākaraṇa-śāstra: science of grammar.

vyāghātatā: incompatibility, opposition; contradiction as a defeater of a thesis as shown by *tarka.*

vyañjaka: indicator, sign, manifester, e.g., a dewlap for a cow.

vyāpāra: "operation," "employment in causal operation," which is said to be required of "triggers" (*karaṇa*) in relation to effects; e.g., the activity of an axe being used to fell a tree is the "causal employment" of the axe with respect to the tree's being cut down.

vyāpti: "pervasion," a relation that grounds inference, a factual relation, according to Nyāya and some other classical schools, such that everything exhibiting a prover (H) also exhibits a probandum (S), e.g., wherever smokiness, there fieriness: $(x)\ (Hx \rightarrow Sx)$.

vyāpya-vṛtti: "locus-pervading," as the universal cowhood of every part of Bessie the cow.

vyatireka: negative correlations (things not-S and not-H) entailed by a natural pervasion, *vyāpti*, constituting negative evidence for a pervasion; see also *ANVAYA-VYATIREKA.*

vyavahāra: common experience and linguistic practice, what people commonly do and say; taken by Naiyāyikas and other classical philosophers as presumptively authoritative; convention, agreement.

yathārtha: matching or corresponding to an object, cognition "as something is (or was)"; correctness or truth of a remembering.

yaugika-pratyakṣa: yogic perception, special perceptual capacities presumed to be brought about by yoga practices.

yoga: (1) practices of self-discipline; (2) etymological synthesis ("union") or derivation as establishing meaning, e.g., 'swimmer' as composed of the verb 'swim' and the agential suffix '-er' to mean a person who swims.

yoga-ruḍhi: meaning established both by convention and etymology, e.g., 'catcher' as composed of the verb 'catch' and the agential suffix '-er' to mean not only a person who catches but, by convention, a particular position on a baseball team.

yogyatā: semantic fitness, a condition or "excellence" (*guṇa*) governing the intelligibility of a statement and the acquisition of knowledge through testimony, according to Naiyāyikas and others; e.g., "He is watering the plants with fire," is unintelligible in a non-metaphoric sense, because the semantics of "watering" precludes fire as an instrument in the action.

Texts and Translations

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